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## I

## THE NEW SCHEME FOR THE TRAINING OF TEACHERS IN SCOTLAND

For the last five years there has been in operation in Scotland a scheme for the training of teachers for primary and secondary schools which is in many respects unique in the history of educational administration. Because of the progressive and democratic character of Scotch education, and because the plan involves many features that rest on lengthy experience, the scheme and its present results seem to justify analysis and discussion. Its main features may be thus summarized: (1) Final responsibility for, and control of, the training of teachers for all schools and subjects below those of university grade—teachers in primary schools, in secondary schools, and of special subjects—are lodged, in each of four divisions of Scotland, in a provincial committee which is fairly large and representative of the various educational interests of the province, including as well those which are expressed thru the layman, as well as those representing the expert educator. (2) In the training of teachers the provincial committees are empowered and expected to draw into cooperation the various educational agencies of the provinces, including universities, technical schools, secondary schools, centers of art training, of physical education, public schools for practising purposes, etc. (3) As contrasted with the older scheme in Scotland and with the still prevalent condition in continental European countries, the new system defers until

a relatively late date the conscious differentiation, on social or intellectual lines, of those who are ultimately to be teachers in primary schools [1] from those who are to be teachers in secondary schools; in fact, as will be shown later, owing to possible contact of primary teachers with the universities, and the necessary contact of all other teachers with the provincial committees, there never is a clear-cut differentiation. (4) During the latter part of the period of secondary education, youths who expect to teach make the beginnings of their professional preparation, both in theory and in practise, thus offering a strong contrast to the prevailing American practise. (5) At all stages in the preparation of the future teacher, extending for about five years after the minimum age of fifteen, cultural and professional training are carried on side by side (except in the case of university graduates who enter the secondary schools, and whose professional training must be more concentrated); this being in considerable contrast with the American practise of allowing a fairly sharp break between professional and cultural education in the preparation of the elementary teacher.

It is a matter of well-known history that from the early days of the parish school Scottish teachers have shown a passion for university culture. To obtain this education, these men often underwent great sacrifices; but in turn they pre-

[1] The "primary school" is the equivalent of the American elementary school, except that the regular course, which must precede the taking of a secondary-school course, is two years shorter, terminating usually at the age of twelve. For those who do not go to secondary school there is an additional (supplementary) course of two years, compulsory up to the age of fourteen. "Secondary education" (as the term will be used here), beginning at the age of twelve, lasts five or six years, preparing for admission to the universities or for professional training. Secondary education is divided into two stages: the first is more general, and lasts three years, giving (but not before the age of fifteen) the intermediate certificate. Some secondary schools attempt only this stage of the work. The second stage may be considerably specialized, and gives the leaving certificate (or the junior student certificate to those preparing for primary teaching), which admits to the universities.

pared the promising boys of Scotland for the universities by giving them the requisite training in Greek, Latin, and mathematics. Consequently, it has long been an attractive tradition that, where possible, teachers in the rural primary schools and headmasters in urban schools should be university graduates. In the northeastern provinces this tendency was emphasized thru the existence of several bequests which gave considerable aid to schools whose headmasters were university graduates. Apart from the tradition, it became evident many years ago that too many of the teachers fitted for their work under the apprenticeship, or pupil-teacher, system were essentially uncultured, and greatly in need, if not of some university training, at least of a fairly wide secondary education. The professional or trade aspect of their education had been emphasized at too early an age.

Until the passage of the Education Act of 1872 primary education in Scotland had been almost exclusively under the direction of the churches. As early as 1834 these bodies had begun the special training of teachers, and before many years three university towns—Edinburgh, Glasgow, and Aberdeen—saw training colleges maintained in each by both great rival denominations, the Church of Scotland and the Free Church. In 1855 the Episcopalians also founded a training school in Edinburgh, and in 1885 the Catholics established one in Glasgow. All along it had been desired that the students of these schools, situated in the shadows of great universities, should have access to college classes. Official permission for this was obtained in 1873, tho at first it was available for men only; but in time women were also admitted to the universities, and hence the opportunities for higher courses were open to all those who were in the training colleges, and were capable of benefiting from the work.

This juxtaposition of educational institutions, and the admission of prospective primary school teachers to university classes has served to prevent the existence of the social and intellectual chasm between elementary and secondary school teachers, which in European countries so frequently accentuates the social division already existing between the two types of

schools. The abler students in the training colleges not uncommonly added one or two years to their courses and, by taking an arts degree, qualified themselves to teach in secondary schools. But of the many who did not take a degree it was often true that in their primary teaching they felt something of the stimulus of having attended some college courses and of having participated in university life. In 1895-96, for example, of 950 students in the eight training colleges, 220 were taking some university courses. In 1904-05 of 246 men students, 70 per cent., and of 1036 women students, 15 per cent., were in some arts courses, many of whom were to remain a third year and take an arts degree.

In addition to the training colleges under denominational control there appeared some ten years ago additional training centers under the control of bodies known as Local Committees and generally consisting partly of governors of colleges and partly of eminent educators and members of boards of education. One of these was at Aberdeen, where training colleges already existed, and the other was at St. Andrews University, where hitherto no training of teachers had established itself. Part of St. Andrews University, known as University College, being located at Dundee, a populous center, it was here that the largest of these non-denominational centers developed. To some extent these centers pointed the way to the final control of the training of teachers by bodies representing the public schools and external institutions which came a few years later. Here it is sufficient to note that these centers, like the training colleges, were also in close touch with the universities, and frequently sent their students for arts courses.

During the period under discussion almost all candidates for the training colleges and centers had passed thru what was known as the pupil-teachers' training, which was substantially a form of apprenticeship. The pupil teacher, commencing at the average age of thirteen, and often earlier, assisted in the school, sometimes even giving considerable instruction, for a period of some four years. In return for this assistance the school, usually thru the headmaster, gave

the pupil teacher instruction along cultural and professional lines, which would fit him for the training college. The prospective teacher naturally acquired a large amount of practical experience, but was apt to lack culture and a broader professional training. It happened, too, that many of these pupil teachers, after qualifying for entrance to a training college by taking an examination under the education department, did not continue their professional training, but were employed by economical school boards instead of fully trained (and, therefore, more expensive) teachers. For the time, however, the pupil-teacher system was largely necessary, owing to the scarcity and expensive character of good secondary schools, except in the large cities. Secondary education was still largely for those who were destined to go to the universities, and who, if they became teachers, would fill places in secondary or other higher schools.

In Scotland as in England, the educational revival at the opening of the twentieth century made it evident that the pupil-teacher system had passed the era of its usefulness. More culture as well as broader professional efficiency was demanded in the teachers of the primary schools, rural or urban. There was a wide-spread desire that the primary schools should develop the teaching of the newer subjects like art, natural science, music, household management, and manual training, but the pupil-teacher training, even when combined with two years of training college work, was inadequate to fit teachers for the new work.

In the meantime a rapid development of secondary education, much of it as part of the public-school system, was taking place, and already in some of these schools pupil teachers were receiving part of the preparation for the examinations that would admit them to the training colleges. It was in 1898 that the administration of the Science and Arts grants of the National Government was transferred from South Kensington to the Scotch Education Department. This gave the department practically complete control of all education in Scotland except that of the universities, and systematic efforts were begun to integrate the various forms of schools and

instruction which had grown up, or for which an immediate need was felt.

By this time, too, the church authorities were no longer anxious to continue their management of the training colleges (excepting the Catholics and Episcopalians, whose training schools prepared teachers largely for voluntary (private) schools under their own control). In fact, so far as the six training colleges under the two Presbyterian churches of Scotland were concerned, they had largely ceased to be denominational. The time was ripe, consequently, for a comprehensive scheme dealing with the training of teachers in Scotland.

After discussion, this comprehensive scheme took form in 1905. On January 30 of that year the Committee of Council on Education in Scotland established, by Minute,[2] four provincial committees on the training of teachers. Each committee had its center at the university of its area. A few phrases may be quoted from the Minute: "Each committee shall have power to provide, whether in university classes or otherwise, courses of instruction suitable for the training of teachers (including teachers for secondary schools)." "(These courses) shall be held in towns where a university or part of a university is situated, but the committee shall have power to institute, with the consent of the Department (of Education for Scotland), subsidiary courses of training at approved centers in connection with (secondary schools, or other spe-

[2] General legislation for education in Scotland must take the usual course of all Imperial legislation, thru Parliament. But matters of administrative detail are usually compassed by the device of legislation thru "minute." In this form of legislation administrative proposals emanating from responsible officials or committees (in the case of Scotch education, The Committee of Council on Education in Scotland) are given publicity and brought to the attention of Parliament. If there is no objection or amendment, the proposals become effective as legislation. The usual form is: "This Minute shall not come into force till it shall have been submitted to Parliament, and shall have lain on the table of both Houses for at least one calendar month, and all modifications of the same which may be proposed subsequently shall be submitted to Parliament in like manner."

cial schools)." "Each committee shall have power to acquire . . . suitable premises for purposes of aforesaid training; . . . to appoint officers at suitable salaries either for purposes of instruction or of discipline, and to prescribe courses of study for the students collectively or individually." "Each local committee shall appoint an executive officer, who, subject to the instructions of the committee, shall discharge the functions of director of studies and who . . . shall be responsible to the committee for the due observance of the committee's regulations as to the conduct of the students." It was also provided that all sums of money designed to provide for the training of teachers or to aid prospective teachers should henceforth be paid over to the provincial committees. These committees were also empowered to take over any existing training colleges where arrangements and guarantees could be made with the existing managers. Within three years the conditions for the transfer of the six original denominational colleges, as well as the training centers under local educational authorities, had been arranged. Denominational colleges can, as before, continue to train their own teachers, as in the case of the Catholic school at Glasgow, and the Episcopalian schools of Edinburgh, but these, in return for the aid received from the Education Department, are subject to inspection, and must meet all the prescribed conditions for teachers' certificates.

In the new scheme first interest naturally attaches to the composition of the provincial committees. It has already been suggested that these were intended to represent the various educational interests of the province. That will be shown by an examination of the schedule of membership of the committee in connection with St. Andrews University. Under the minute at present operative (1909) it must consist of (1) four members elected by the University Court of St. Andrews; (2) one member from Dundee Technical Institute; (3) three members elected by the school board of Dundee; (4) nine members elected by various other specified school boards (and, of course, representing all the school boards of the province); (5) two members "representing the managers of the more

important secondary schools (within the province) "; and (6) three other persons actively engaged in the work of education cooperated (elected into membership) by the members named under section (1 to 5). The chief inspector of schools is also an advisory member, acting as the department's assessor, but without a vote.

The composition of these committees is effected under minute and can be changed fairly easily; in fact, it is probable that some changes will be made towards the close of the present year, when the term for which the first committee men were elected shall have expired. (Members must be allowed to hold office for three years; but the dates of subsequent elections are arranged by minute.) It has been suggested that under a new arrangement the membership will be smaller (the provincial committee of Edinburgh, for example, has over thirty members). It has also been suggested that educators will perhaps figure more largely in subsequent committees, tho it is evident that in the present arrangement there is nothing to preclude a lay board from electing, as its representative, not one of its own members, but some educator or citizen in whom it has confidence. In practise the director of studies, who is the committee's expert, will occupy a place of increasing importance, in this respect resembling the superintendent of schools, or other expert executive, with whom Americans are familiar. The tenure of the director of studies is fairly permanent, and, in view of his contact with a variety of educational institutions in his area, it can be seen that his position will evolve very great responsibilities and powers of indirect control.

It should furthermore be noted that under the minute and under the department of education very considerable latitude is allowed the provincial committees. Schemes of local organization, courses of study, etc., are subject to considerable local variation. It is significant of the progress of educational administration that not only in this, but in other important respects, a considerable flexibility is making its way into an educational system which may have formerly seemed highly rigid as it is indeed highly centralized. The new Education

Act (1908) for Scotland is especially remarkable for the large amount of optional powers it confers on local administrators. From the American point of view this would seem to be a perfectly natural evolution in proportion as local administration produces its educational experts, and in proportion as they are able to stimulate local interest in educational progress. Hence, tho the provincial committees are large, and tho some of their members live at a distance and can with difficulty be kept in touch with actual conditions, it would nevertheless appear that the large indirect authority of the directors of studies, coupled with the fact that the committees can always give expression to local demands, and can represent local sentiment, gives the machinery for the most effective educational administration.

The latest stage in the formation of a general policy for training teachers under the new conditions is found in the organization of a joint committee of the provincial councils. Naturally the four directors of studies were made members of this joint committee, the powers of which are mainly advisory, but which will doubtless to an increasing extent concern itself with uniform systems of training, control of the total number of teachers to be trained, and the like. But this joint committee will have influence in matters of national importance and common interest; it will probably in no way supersede the provincial committees in matters of local concern.

## JUNIOR STUDENTS

In the training of teachers for the primary schools there are two stages: In the first the student is in a secondary school and is known as a junior student; in the second he is under the provincial committee and is known as a senior student. The junior training is regarded as an integral part of the professional education of the teacher. To become a junior student a youth must have completed the first stage of secondary education, obtaining what is known as the intermediate certificate. This may not be taken under fifteen years of age.

The prospective junior student must furthermore "furnish a satisfactory medical certificate as to health and physical fitness," and also a report from his last principal teacher having "particular reference to those qualities which seem to make for or against the applicant's ultimate fitness for teaching work." "With a view to forming a judgment, the teacher may occasionally, during the three months immediately preceding the application, employ the applicant in giving instruction under supervision in the junior (lower primary) classes in the school." Having met these qualifications, the youth may be nominated as junior student, and as such he usually pays no fees in the secondary school, and may even receive, as many do, from the county or burgh committee concerned, considerable sums towards a maintenance allowance while completing his secondary education.

At present (1909) there are in Scotland one hundred and twelve schools recognized as suitable junior student centers. Many of them naturally have but a few students who have been nominated as junior students. A considerable number of schools whose work did not formerly extend beyond the intermediate certificate, now offer an extensive and varied enough curriculum to meet the requirements of junior students. It may be said in passing that there is some uncertainty as to how far it may prove advantageous to have small secondary schools doing junior student training. Under a regulation just coming into operation the areas for the administration of secondary education have been enlarged, and the authorities have been empowered to pay transportation charges and even maintenance charges, for students sent in to central institutions for the completion of their secondary education. It is not impossible that in the future the number of schools preparing junior students may be diminished, and that the work will be concentrated, especially for the purpose of obtaining satisfactory supervision of practical teaching and of method work.

It has previously been said that the junior student combines cultural and the beginnings of professional training. The course is normally three years, exceptionally two years in

length. Substantially one-third of the time is given to what must be called professional work—practise teaching, or assisting, study of methods, and the further study of subjects like manual work, music, nature study, etc., which do not regularly enter in the courses of those preparing for the universities. As part of the cultural work, one foreign language has to be taken, but many students take two, owing to their desire to qualify for an arts degree in a university. (Just at present there is a tendency for the universities to liberalize their requirements in respect to the amount of foreign language required.)

The minimum curriculum that a recognized school can provide must include English, a foreign language, history, geography, mathematics, experimental science, drawing, some form of manual work (needlework for girls), physical exercises, and music. In practise a considerable range of election, or rather opportunity for specialization, is allowed to the individual student. Notwithstanding this, a tendency to overcrowd the program of the individual student has developed, which will probably lead to a reduction of the amount of time given to foreign languages. A recent circular of the Education Department points out that if, during the three years of the junior training, two periods of forty-five minutes each per week were given respectively to a foreign language, history, geography, mathematics, and one period to music and another to physical exercises, whilst eight periods were reserved for English, the student would still have left practically one-third of his time for specialized or intensive study, after suitable deductions had been made to meet the requirements of practise teaching. The circular also points out that the student may specialize in any of the foregoing subjects, or in manual training, domestic arts, nature study, music, etc. But it is clearly indicated that if the junior student does so specialize he must do it in a way that will produce marked results in capacity, in order to have this work recognized in the next stage of professional preparation—the Provincial Training College.

The outcome of the present situation will apparently be

the following: The total weekly hours devoted to study will be reduced, and very few students will be allowed to complete the course in two years; the amount of time devoted to foreign language study will be diminished, whilst that devoted to geography and history will be increased, especially as it is in prospect that these subjects will soon be segregated from the English program under which they have been included; and the study of English—its technical side and its literature—will be somewhat increased; while beyond this opportunity will be given to the junior to either prepare for university courses, or to specialize in some phase of art, science, or industrial work for special teaching, or, finally, to lay broad foundations for teaching in the primary schools. But "for a junior student to aim simultaneously at all the ends just indicated would be unwise in the last degree; and the unwisdom of such a course is becoming more and more apparent as the average standard of attainment in the various special subjects steadily rises."

If the culture curriculum for the junior student is still unsettled, the same is yet more true of the professional part of his preparation. From the point of view of American education, any professional preparation during the secondary school period is difficult of apprehension. But it must be remembered that the new scheme in Scotland inherits much from the pupil-teacher system. Early practise in teaching has several aims: It serves from the outset to discover for the student and for his instructors natural teaching aptitude, or, perhaps more usefully, lack of aptitude; and it gives during a still very plastic period of life a body of concrete experience with school conditions such as can be acquired only with extreme difficulty at a later period. Both as a means of selection and of professional adjustment, and as a means of early habituation to school conditions, it can hardly be doubted that practical work for the junior student is extremely valuable. The visitor to British schools must be imprest with the confidence possest by the young teacher in the problems of class management. There can be no doubt that in the future this portion of the training of primary teachers will not

be reduced in scope. But as to the adjustment of practical work to the remainder of the program, various plans still prevail. From some points of view, it is preferred to concentrate it in a half-year towards the end of the course. In the communication above referred to it is suggested that "it might occupy one period per week in the first year, two in the second, and three in the third. In the third year some portion of the practise should be continuous, the student taking charge of a class for a week or more at a time."

The so-called study of method is, in the secondary schools, usually directed by the head of the school, but in the larger centers a master or mistress of method has been introduced.

On the satisfactory completion of the course the junior student certificate is issued, not on examination, but on recommendation of instructors, who must certify that the junior student has followed an approved course and whose record of work in the various subjects has been examined, evaluated, and certified by H. M. Inspector of Schools. The same students may take examinations for the leaving certificate in such subjects as they have prepared themselves, on the basis of which they may continue their studies in suitable courses in the universities. It is asserted that the students who seek the junior student certificate are often of superior quality and industry, and that it is not impossible for them, alongside of their practical work, to fully qualify for university work. But from references previously made it would appear that this practise has led to unwise overcrowding.

It is probable that further developments will soon take place in the process of unifying and integrating the training of junior students. Already conferences of those most responsible for special phases of this training have been held, and in time these will become necessary and will assume definite form. For example, the instructors responsible for method work and the guidance of practise teaching can easily be brought into an annual conference. The bringing together of specialists in other departments has already been accomplished for particular provinces, and promises to become a regular feature of the work.

SENIOR STUDENTS

Having obtained the junior student certificate, prospective teachers now come directly under the charge of the four provincial committees and are known as students in full training, or senior students. The large majority of these are preparing to be primary teachers, and many will take only a two years' course, with little or no university work. They may pay a fee of £10 to the provincial committee and thus become relieved of any obligation to teach; but the large majority feel it necessary to apply for a remission of fees and a maintenance allowance (usually £15 for men and £10 for women), under which circumstances they must pledge themselves to teach for not less than two years in public schools, or repay the aid advanced to them.

The course of work prescribed for senior students who do not attend university classes embraces the following: (a) Professional subjects—hygiene and physical training, psychology, logic and ethics, principles of education, and methods and practise. (b) General subjects (from which some exemption can be had if the secondary school record is very satisfactory)—English phonetics, history, geography, mathematics, nature study, drawing, and singing. (c) Extra subjects (under this head the student is expected to take some special line of work, of which a considerable variety is available in the fields of physical education, arts training, industrial training, etc.; and it is expected to extend this field to include subjects now given in the supplementary courses [non-secondary education for youths from twelve to fourteen who have obtained the qualifying certificate]).

Senior students who take part of their work in university classes, schools of art, technical colleges, or agricultural colleges are obliged to take the professional subjects above mentioned, besides hygiene and physical training, singing, drawing, phonetics, etc. Whatever other work is taken must tend to form a coherent scheme of study with a view to some special line of teaching. It is also provided that students who distinguish themselves in this work can be supported for a

third year of training, which may not impossibly be extended to a fourth in the near future. It will be evident that this plan provides a fairly integrated scheme to secure broad professional as well as intensive specialized training for those teachers, undoubtedly to be an increasing number, who will have charge of special subjects in the expanding scheme of public education.[3]

For the purposes of practise teaching the provincial committees have right of legal entry to the public schools, but may be required to pay into the funds of the school system used a sum up to £2 for each student entered. The practising teacher comes under the immediate direction of the head of the school, and is appointed to observe, assist, or take charge of a class in some particular room. The teacher in whose room the candidate works is expected to make a report on ability shown. In the course of his two years' training the senior student is introduced into a variety of schools. A number of the practising schools formerly under control of the training colleges still exist, and it is hoped that these can be developed into either experimental or demonstration (*i.e.*, model) schools. In the discussion of this question some hold that these two types of schools will have to be separate, whilst others hold that a single school can be made to serve both purposes. But it is significant that for actual practise teaching the Scotch Education Department is committed to the plan of utilizing on an extensive scale the public schools of the neighborhood, and that prospective teachers will have to work largely under very practical conditions.

The methods work is directed by a master of method; but it is coming to be more and more expected that in each case the lecturer in any special subject shall be master of method for that, and shall follow the students in their practise work in his field, thus compelling a close relationship between theory and practise. It is probable that some of the intimate connection between special subject and its method will evolve in the demonstration or experimental school. "The demonstra-

[3] The detailed plan above given is from the scheme of the St. Andrews provincial committee; but it may be taken as typical.

tion school," says Dr. Scougal, chief inspector of the training of teachers, " need not be large. It should, however, be really a 'model' school—a model in respect of organization, furnishing, and equipment as well as in respect of methods of teaching. Students should be able to see there the most approved methods put into systematic practise under the best conditions. The training demonstration school should eventually have its special separate rooms for the teaching of history, geography, science, languages, etc., each completely equipped with the most suitable aids to the proper study of its particular subject." It would appear that from this school as a center a close connection will develop between method work and practise, which will follow the student into his practise teaching in the public schools.

In the teaching of educational theory (taking the subject broadly) there is now a tendency to introduce university specialists for the subjects which are prescribed under this head—logic, psychology and ethics, experimental psychology, and the history of education (included under principles of education).

### THE PREPARATION OF SECONDARY SCHOOL TEACHERS

Secondary school teachers fall into two groups under the rules of certification in Scotland: (a) Teachers of higher subjects—English, Latin and Greek, mathematics, science, modern language, history, geography; and (b) teachers of special subjects—art (including drawing), applied science or technical industry, agriculture, commercial subjects, domestic economy, physical training, manual training or crafts, music, etc.

For the first group it is now necessary that the candidate, after having obtained a master of arts or a science degree, submit himself to the provincial committee for practically a year of professional training. In most cases either an honors degree is required, or at least attendance at honors classes (a procedure which implies intensive work, with considerable specialization). Under the provincial committee the candidate

must take courses in personal and school hygiene, psychology (experimental and observational), logic, and ethics; principles and history of education, with a course on present-day problems; methods of teaching special subject or subjects; and practical teaching. Under present arrangements the last two subjects occupy ten hours per week for one semester.

It will thus be seen that, whilst the universities, which have no direct connection with the Scotch Education Department, are still responsible for the scholastic training of these teachers, their professional training comes under the department working thru the provincial committees. This is largely new work for the committees and it is evident that they are still wrestling with the problems of suitable training. It will be recalled that these university students, as a rule, have had no preliminary practise in teaching, since they have not served as junior students, consequently the problem of giving them familiarity with class management is a peculiar one. It is felt that for these students there is special need of the educational laboratory—an experimental and observational school,—tho of course it is also expected that practising will be done in ordinary schools. The European practise of regarding the beginner more in the light of an assistant and less of a fully responsible teacher naturally facilitates the development of this practise work. There are indications that in this work considerable attention will be given to comparative education—the study of practises in secondary schools, both local and foreign, with especial attention directed to significant likenesses and differences.

For teachers of special subjects neither technical preparation nor professional training can yet be subjected to general rules, and individual cases must be treated largely on their own merits. But here also the final professional preparation, including the special method that the subject may need, and also requisite practise teaching in it, are under the provincial committees, which are already beginning to map out lines of operation. In the case of these teachers a year of probationary teaching is now being especially insisted on as a condition of final certification (all teachers have to have one and usually

two years of probationary teaching under a general certificate before the certification process is completed). In general it may be said that the professional preparation of this group of teachers (who are increasing in numbers owing to modern developments in Scotch education) is evidently to be, to an increasing extent, organized so as to include not only professional studies, but a considerable amount of practical training. When it is recalled that Scotland is making rapid advances in the development of technical and agricultural education, as well as practical education for girls, the importance of the above scheme for the training of teachers becomes apparent.

The ideals underlying the foregoing schemes are clear: Scotland seeks to obtain a teaching force each member of which shall combine culture and special professional preparation. To that end final responsibility for the preparation of teachers is unified in local bodies completely answerable to the Education Department; but it is also sought to utilize every available existing agency in the work. It will be of interest to examine some of the difficulties encountered in the pursuit of these ideals, and to discover whether suggestions can be derived which will be of service elsewhere.

The ambition that large numbers of the teachers of the primary schools should profit by their contact with the universities may prove impossible of realization. This is not due wholly to the demands which professional training must make upon the senior student, for it is still the intention of the authorities to widen to the fullest possible extent the cultural outlook of the teacher. It is due partly to the fact that the culture given by university courses may not be culture of the kind most suitable to primary teachers. The tradition that universities embrace all the opportunities for cultural training must give way in the case of certain large groups of persons, as President Eliot pointed out some years ago. The primary teacher is peculiarly in need of culture; but it must be the culture that functions in the environment in which he (or usually she) is to live and work. That a foreign language,

for example, is a necessary ingredient of this culture may be questioned. At least it is questioned in the practise of the Scotch educators, who are reluctantly admitting that university courses are probably out of the question for the majority of their primary teachers, while at the same time they are adding to the requirements to be imposed upon teachers in the future on the side of culture. Reluctantly, it was said above, they are doing this, because the university degree carries with it in Scotland, possibly more than elsewhere, a very considerable prestige.

It is sometimes suggested that in time a way of avoiding the above difficulty may be effected thru the recognition of part of the cultural training or professional preparation of the primary teacher as suitable grounds for a degree. If, for example, the senior student has practically the qualifications to admit him to the university (and it should be noted that the Scotch universities are rapidly liberalizing their admission requirements), and if, as part of his senior work, he pursues the subjects which constitute for him cultural training of a genuine kind, it may prove ultimately possible to recognize some of it towards an arts degree. Laboratory and library research now constitute essential parts in the training of men who are ultimately to enter the professions. It is not impossible that the universities will yet recognize work of similar scope, intensity, and thoroness done in the field of preparation for teaching.

In the absence of such recognition and contact it is quite possible that the provincial committees will tend to evolve teachers' colleges lying close to the universities and closely cooperating with them, but retaining final responsibility for the equipment of teachers. In an important address delivered before the Educational Institute of Scotland in December, 1908, Professor Darrach who, by virtue of his position in the University of Edinburgh, has had an opportunity to give this matter much attention, exprest the opinion that it would yet be necessary to follow the line of action indicated above. He suggested, too, that the teachers' colleges thus formed might, within limits, become centers of research and investiga-

tion. The work in education in the universities might be reserved for students looking to advanced positions in the educational world—those who might need technical preparation for inspectorships, lectureships on method, etc. American students of education will recognize that in some cases a similar solution is anticipated there, altho at present it can hardly be said that the field of professional training for elementary education is affected.

The economic difficulty is also one that will weigh heavily upon the education authorities. The training of a high-grade teaching force will cost money, but the maintenance of salaries worthy of highly trained teachers will cost the community still more. Scotland is fortunate, as contrasted with the States of America, in that the entire expense for training teachers and a very considerable portion of the expense of education in general is borne by Imperial grants. But the Imperial budget encounters difficulties of its own. However, it seems to be a growing conviction among the people of Great Britain that their success in international competition lies in depending upon a wide distribution of ability of a high order, whether in cultural or in productive fields. The development of appreciation of a high order will result, so many Scotch educators believe, in production of a high order, the field in which their country must excel if it is to maintain its place. Hence it would appear that there is a growing appreciation of that which ought to be a fact: namely, that the cost of education is a form of social investment and that if the investment is wisely made it will produce an abundant return. Only the general acceptance of an idea of this kind can sustain the British people in the face of the growing expense which is necessarily incident to the educational revolution now going on there.

Whether the increasing demands made for professional training will result in a scarcity of candidates for the teaching profession remains to be seen. Scotland, it is well known, has always been prolific of teachers. The schools of Canada, Australasia, and England recruit from there to a considerable

extent. It is highly probable that there will be no dearth of candidates, especially in view of the fact that a large number of them are practically subsidized for this training from very early years, and in view of the development in Scotland of the beginnings of a well-defined superannuation scheme. But it is not improbable that men will tend to disappear from the field of primary teaching; in fact, they are becoming scarcer even now.

It has already been indicated that, as contrasted with the schemes for the training of teachers found elsewhere in the larger countries of Europe, the Scotch system tends to minimize the social and other artificial distinctions between teachers in elementary and those in secondary schools. If anything, Scotch education is becoming more democratic and the new scheme for centralizing responsibility for the preparation of teachers should further contribute to this tendency.

From the standpoint of American practise, the most conspicuous feature of the present system is its retention of some professional training during the secondary period. The tendency in America in recent years to require secondary-school graduation as a condition of entrance to a normal school has had the undoubted effect of providing a more select body of students for the normal schools, but it has been accompanied by practically no steps to adjust even a portion of the secondary education to the needs of the future elementary school teacher. The Scotch system does two things, it will be observed: It provides that part of the secondary culture work shall be in fields not removed from the cultural needs of the primary teacher—nature study, music, drawing, geography, etc.; and it secures enough theory and practise of education to enable the candidate to discover or have discovered for him whether he has a vocation in teaching, while at the same time it gives a very considerable amount of experience in contact with teaching conditions while the prospective teacher is still plastic. At present there is a very complete break in the experience of the American youth who leaves the elementary school at fourteen and who for probably five years thereafter does not come into contact with children, elementary school conditions, or even

the subject-matter of elementary school teaching. The Scottish junior student, just past fifteen years of age, can frame practically half his work for three years with reference to a future teaching career, and in the meantime, by frequent contact with actual teaching conditions, acquire that early confidence which is so characteristic of British teachers, doubtless in part the result of the pupil-teacher system.

It should also be noted that from the taking of the intermediate certificate, both prospective primary and secondary teachers are able to specialize to a considerable extent, or rather to pursue some few lines in an intensive fashion. It is hardly fair to describe as early specialization a system which, while keeping the student in touch with many branches, requires him to give especial attention to a limited number. The result seems to be a combination of culture and proficiency which is satisfactory. To "know a little of everything and all of something" may be a highly desirable rule of action in the present expansion of the world of knowable and interesting things.

Americans will do well to observe attentively the new Scotch scheme. Thought and experience have gone into it; and the conditions of Scotland, socially and educationally, are more like those of America than can be found in any other country of Europe. It is of especial interest, also, because all admit the yet tentative character of many of its features; but it would be hard to find anywhere a movement which has so many men in it all of whom are frankly convinced that better things lie ahead and that they are under obligation to find these better things.[4]

[4] While I am under obligations to many friends for suggestions for this paper, I desire to make especial acknowledgment to Mr. James Malloch, director of studies for the St. Andrews provincial committee. For any deficiencies, however, Mr. Malloch has no responsibility.

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## II

## A PROPOSED REFORM IN MATHEMATICS[1]

Professor John Perry, M.E., D.Sc., F.R.S., author of a number of widely known books upon the subjects of mathematics and physics, is professor of mechanics and mathematics in the Royal College of Science, South Kensington, London, S.W., and, at last accounts, was acting as chief examiner in engineering for technical schools, art schools, evening schools, and other forms of provision of further education in England and Wales under the direction of His Majesty's Board of Education.

His idea is that the subject of mathematics as presented to students in the vast majority of schools and colleges thruout the civilized world has been made far too abstract, too complicated, too academic, and as a consequence has been kept too far removed from the field of its legitimate applications in the world of science and industry. Boys, who should be already using logarithms, slide rules, trigonometrical formulas, integrals, and the like, freely, are found to be still poring over unnecessary details, useless repetitions, impractical problems, and effete material under such headings as elementary algebra, plane and solid geometry, and trigonometry. This is all wrong. Short cuts to practical methods, leading to the rapid acquisition of facility in the use of mathematics as a useful tool, should be the principal end in view, and not "mathematical rigor" nor "mental training" *per se*. In the Professor's own words, "To me mathematics is a powerful weapon with which to unlock the mysteries of Nature. If a man knows how to use the weapon that is enough. Let him leave to others, the men who delight in that, the forging of the weapon, the complete study of it. If I can use the weapon,

[1] From an address before the American Federation of Science and Mathematics Teachers in Boston, December 28, 1909.

let my study be of another kind—I think, perhaps, of a higher kind—to study the secrets which even an unskilful use of the weapon will reveal to me. Fain would I know more about how the weapon was made and how to forge it for myself; but if I have no delight or skill in making weapons, and if I have uncommon delight in using them, then I will use them if I can, and practise using them till I become skilful, for I know that the weapon-maker is not likely to be skilful in its use." Again, "I believe that men who teach demonstrative geometry and orthodox mathematics generally are not only destroying what power to think already exists, but are producing a dislike, a hatred, for all kinds of computation and therefore for all scientific study of Nature and are doing incalculable harm." And, in another place, "As examples of methods necessary even in the most elementary study of Nature I may mention: the use of logarithms in computation, knowledge of and power to manipulate algebraic formulæ, the use of squared paper, the methods of the calculus. Dexterity in all these (when properly taught) is easily learnt by all young boys. In such practise their brain power develops quite rapidly and they learn with pleasure." [2]

Just about a year ago the writer had the rare privilege of an interview with the subject of this paper, at his headquarters in London, and was permitted for nearly two hours to discuss the teaching of practical mathematics with a "man who knows."

Short of stature, thick-set, with keen eyes, iron-gray hair, a short mustache, smooth chin, a quick nervous air, and a habit of running his hands rapidly thru his short, curly locks when thinking earnestly, Professor Perry reminds one of the familiar picture of Beethoven sitting in his study. He is a live wire; there is no doubt about that. Book after book and pamphlet after pamphlet are drawn from bookcase, ta-

[2] For further literature upon the subject and a complete exposition of the idea, see: Sundry articles in *Science* and *The school journal;* Perry's *Practical mathematics,* being a summary of six lectures to workingmen, London: Wyman & Sons, 1896, 6d.; Perry's *The teaching of mathematics,* paper read before B. A. A. S. at Glasgow, 1901, with Discussion and report of committee. Macmillan.

ble, cupboard, drawer, to illustrate the meaning and purpose of the new movement in mathematics. The distinguished author believes in his own idea, that's sure. To the question as to where copies of the books and papers referred to could be had came the instant reply: "I will send these to your American address, prepaid." . . . "Saxelby's book covers all that any engineer or anybody else, for that matter, needs to know about mathematics. Geometry, plane and solid, as a distinct subject has no place in undergraduate work, but is adapted only to post-graduate study—a severe exercise in pure logic." . . . "Much of formal algebra should be expunged, thus leaving room for more important topics of applied mathematics." . . . "Teach the pupil, not the subject." . . . "I judge my students by their eyes; when I see that their interest begins to flag I immediately change the topic or the method. They must be kept wideawake at all times."

One can not quote with precision from such an interview. The memory of it is like that of a fresh breeze from off the hills.

Next to the master stands Mr. Frank Castle, for a long time instructor in applied mechanics under Perry, now devoting his entire time to the writing of textbooks in mathematics along practical lines. He is a genius himself. His laboratory is a model for compactness, abundance of practical exercises, and display of commercial apparatus.

So much for the new movement and the man who started it. What has been the outcome? Conservative England, with its traditions of a thousand years based in part upon classical Oxford and scholarly Cambridge, could be trusted to go slowly in such a revolutionary matter. The notions of centuries are not easily overturned. Thruout the British Isles today, however, are to be found two parallel courses in mathematics, one styled pure mathematics and the other practical mathematics. For entrance to many polytechnic, art, and industrial schools the latter is given the decided preference and is rapidly gaining in favor. Five thousand copies of Saxelby's book (see next page) have been sold in England alone. Geometry of the preparatory schools has been transformed.

All courses now begin with concrete work, using ruler and compasses. The university examiners all recognize the new forms and seldom ask for demonstration of a stated proposition. One can not fail to see that a revolution is in progress. The publishers have swung into line and are steadily producing a new type of textbook in mathematics. The list here given represents a complete sequence from grammar grades to technology diploma. One must acknowledge that these modern books are at least very suggestive:

*Elementary:* Knowles and Howard's *Practical arithmetics,* Teachers series (Longmans, Green & Co.); Castle's *Practical mathematics for beginners* (Macmillan Company); or Consterdine & Barnes's *Practical mathematics* (London: John Murray).

*More advanced:* Saxelby's *Introduction to practical mathematics* (Longmans, Green & Co.); Saxelby's *Course in practical mathematics* (Longmans, Green & Co).

Many others might be added, for instance: Cracknell's *Practical mathematics* (Longmans, Green & Co.); Castle's *Workshop mathematics—in two parts* (Longmans, Green & Co.); Perry's *Calculus for engineers* (Macmillan Company).

Says Professor David Eugene Smith, of Columbia University in reference to a similar movement just beginning in our own country: "It is not improbable that the present agitation in the development of preparatory mathematics in this country will penetrate even into our colleges and stir up some new life. When this is done, America will begin to develop for all its schools what England is developing for its technical institutions, books of the spirit of Mr. Saxelby's suited to the peculiar conditions and needs of our country."

May the time speedily come!

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## III

## THE TEACHER AND THE COMMUNITY

The teacher is a member of an exacting profession and he practises a difficult and arduous art. For mere entrance upon his chosen work severe preparation is necessary, and for continued proficiency in his craft alert attention to new methods and to fresh discoveries in the subjects in which he imparts instruction is indispensable. There is no calling in which the stationary man more quickly falls behind, and none in which continued progress demands keener insight, more painful toil, or greater eagerness for conquest. There is a man's work within the walls of the classroom and study for one who would be, and would continue to be, a good schoolmaster.

It is not difficult to imagine a conscientious and devoted teacher who should say: "My work is in my school, and whatever strength I have for professional labor after discharge of each day's school duty must be given to research in the subjects I teach, and in the history, principles, and methods of education. I must at least know what the specialists are doing in my favorite department, and I must keep up to date in my calling: I must read the professional journals, familiarize myself with the writings of the educational masters, and keep informed on the important discussions in educational theory and practise." One can imagine an eager prophet of educational progress remarking on such a statement: "Would that all teachers would do this much! If teachers would only fix their minds on their specific work in this spirit, what improvement would result!"

Nevertheless, the schoolmaster whose horizon is the walls of his schoolroom and study, no matter how conscientiously and intelligently he may labor to make the most of himself and of his work within that field, is neglecting a sphere of interest and endeavor which has just claim upon his time and

thought, and in which the rewards are not less than in strictly professional work. The pedagog may easily become a narrow man, indeed more easily than the representatives of many another profession. There is a suggestion of smallness about the title "pedagog" which indicates that no small number of our predecessors, devoted men, doubtless, in their specifically professional line of duty, were confined in their vision and restricted in their outlook, owing to undue concentration upon school tasks alone, or to failure to admit other interests alongside the exacting art to which they had consecrated their life.

A few years ago a discerning member of the engineering profession addrest a company of technical men on the subject, "Something more than an engineer." The address was a noble plea for idealism, a convincing exhibition of the high rewards in personal satisfaction from competence in some of the finer and larger things of life, outside the calling by which one earns his daily bread. With all just regard for the profession of the teacher, its breadth and variety, its invitation to expansion of mind, culture of imagination, and hallowing of purpose, it is nevertheless true that until a man is something more than a teacher he is not the man he should be, nor has he put himself in the way of receiving a large portion of the better things of life. No textbook on methods of teaching and school management contains all that a teacher needs to study for the discharge of his duty. The schoolmaster is a man before he is a teacher, and there are certain duties as a man which he cannot neglect without serious loss both to himself and his work.

It is not required that one limit his citizenship on taking charge of a schoolroom, and the teacher has all the ordinary duties that develop upon the citizen under a popular government. He must vote, and vote intelligently and according to his convictions. He must pay taxes, and he should acquire the information of an intelligent and conscientious taxpayer as to the objects for which taxes are demanded and the method in which public moneys are expended. As a man of education his ballot should represent wide and accurate information as to the conduct of public business, and he is

under obligation to himself and to the community, as a man of trained mind, to equip himself for enlightened judgment, and for a judgment practically wise in the premises in which the community finds itself, on all questions to which the ballot returns answer. To this extent he shares the responsibility of every man of education in the community, and the body politic should be able to count upon him, as it counts upon its broad-minded lawyers, its influential clergymen, and the whole company of its most enlightened and progressive citizens, for the right stand upon all questions of moment which it is summoned to face.

The inquiry may be raised whether the duty of the teacher does not extend further. The master of a school has exceptional opportunities for acquiring information as to the community in which he lives. He may easily know its people better than any other citizen. Perhaps the physician has more intimate knowledge of a section of the people, their family affairs, and their individual frailties. The lawyer and the banker may excel him in information of the business enterprises of the city, and the clergyman may see more deeply into the recesses of men's hearts. But the man who knows the boys of a town, and knows its homes through his knowledge of its young men and women, has a vantage-ground of observation from which he should discern the real life of the community, its virtues and its limitations, better than any other man. He should be able to catch the drift of things in the municipal life, the direction of its strong under-current. It is the boy who tells the story of the quality of the common life of a village. The man who knows the boys' ambitions knows the secrets of the hearts of the fathers better than the minister who watches them from the pulpit or the banker who hears them talk over the counter. Boys are astoundingly transparent, to one who knows them, and in their frank revelations they disclose not only their own convictions and ideals, but the judgments of those who stamp character upon them in their homes, and the real tenor of life in the community of which they are so sensitive a part. Side by side they sit before him, from the homes of the rich and the poor, the employers

and the workers, those of Saxon lineage and those whose mothers understand no English, children of all races, all faiths, all social conditions, and if the teacher has not a better composite photograph of the citizenship of the community and its many-sided life than any other man, he is dull of apprehension and neglectful of his opportunities.

The occupation of the schoolmaster tends to optimism. His daily contact is with young life, human life at its freshest and best. There is now and then a degenerate son of a noble sire, and the intensity of the tragedy impresses the occurrence upon the mind, and inclines the observer to regard it as typical. As a matter of fact, however, these lapses of manhood from father to son are exceptional instances when the large numbers of parents and children are brought into consideration. The rule is that the boy is better than his father. We live in an improving world, as every student of history will readily admit. Society is not what it was years ago; men are more temperate, and women more chaste; customs have grown more kindly and manners more refined; there is less neglect of the unfortunate, less cruelty, less hunger. We may have no saints in our time to compare with Francis of Assissi, no lover of little children to place beside Antony of Padua, no hero of liberty to rank with Milton, and yet the failure to find men of our own day to rank with these may be merely the failure of our own perspective, while the great masses of men are incomparably nearer their prophets and their saints than in any canonized age of the past.

It will not do to talk much about it openly in any particular community, but any teacher who knows the hearts and lives of both boys and their fathers can bring to his mind instance after instance in which the ideals, principles, and practises of a boy are incomparably superior to those of the father he reverences. Hundreds of pupils are better than the homes they come from, and many a teacher thinks more kindly of the youth in whose higher interests he labors after he knows intimately the quality of their environment outside of school hours. It is impossible to sit long in the master's chair without experience of some clear-faced young fellow, of high

ambitions and generous spirit, who is pressing upward against great odds out of a life pitiably inconsonant with his dreams, with the ideals which fire his soul.

Moreover, in his contact with the men and women of the community, the teacher meets them on their better side. The man who talks about his boy is not quite the man who drives a bargain, or who gives his service to his employer, and the woman who visits the principal in the interest of her daughter is not at all the creature who hovers over a bargain counter, or who pushes her way for a seat in a crowded car. The schoolmaster meets people under circumstances which call out their best, which lift them above their average, and while he may know that they put their best side outward in their discussions with him, it will be impossible for him not to take a brighter view of the community life than is had by the tradesman, the lawyer, the street-car conductor, or even the doctor. In relation to the public school the worthiest feelings of the community are called forth, and the teacher has no excuse whose optimism does not exceed the optimism of even the most hopeful of less advantaged citizens.

This fact imposes special responsibility upon the schoolmaster as a citizen. The community stands in particular need of men of forward look and hopeful spirit. The questions which are decided wrongly in most American towns and cities are not so determined because of inclination of the electorate toward evil, or because of their selfishness or corruption. When unwise policies are adopted it is usually because the issue is not drawn clearly between right and wrong community conduct. Personal or party prejudices come into play, and the blameworthy action is taken out of the supposed need of revenge upon some injudicious public servant, or from the desire to reward some one who has found favor in the popular eye. Improvements are held back because of lack of faith, want of confidence in the developments of the future, or because the serious needs of the community in respect to the higher things of life are not appreciated.

Here is where the teacher should exert a steady, educative influence. With the optimism that comes from constant as-

sociation with youth and with men and women on their better side, with the long look forward to which his occupation trains him, the schoolmaster should be a quiet but persistent force, in the direction of adequate facing of future needs and worthy appreciation of the finer and more spiritual needs of the community. Not that the teacher should become a politician; on the contrary, he should almost never be prominent in the actual crisis of the decision of any public question. But in the making of sentiment, which in the end decides every issue, in the creation of the public character in harmony with which the community must act, he should be, and he may be without conduct in any way unworthy of his profession, a force second to none in the body politic.

A sensational campaign for a new water supply, or for cleaner streets, or for a public library or playground, is one way of doing things, and suits the nature of some men. It does not suit the nature of the finer spirits, and it is not a method adapted to the schoolmaster. He should not be a campaigner, or an agitator, but a sower of seed, and good seed will grow, as well as tares, if sown in the night, while men sleep. Imagine the soul-filling joy of a man who looks out upon a hundred children in a public playground, which his quiet words, continued many days, have brought into being, and which he can rejoice over as his work, while some noisy politician or sensational philanthropist takes the public glory! When, therefore, thou workest for the public good sound not a trumpet before thee, as the politicians do in town-meeting and on the streets that they may have glory of men. Verily I say unto thee, they have their reward. But thou, when thou toilest for better things enter into thy schoolroom, and having shut thy door, declare thy truth and thy visions in the ears of eager children, and thy heavenly Father, which seeth in secret, himself shall reward thee.

The schoolman is forced to interest in public matters by the very condition under which he labors. The schools are supported by taxation, and that support constitutes one of the largest items for which citizens contribute to the public treasury. It is the duty of superintendent and principal, and

it should be a matter of interest to every teacher, to know how much the community contributes for the support of its schools, how the cost of education in the community compares with the cost of other public necessities. They should know also how their town or city compares with other municipalities in these respects, whether as much is spent for education as in other places of like ability, and whether the results in facilities offered compare favorably or unfavorably with that which is accomplished elsewhere.

The administration of school affairs, even in a town of no great size, is a business of considerable importance. In that business every dollar should be made to show a dollar's worth of result, and the chief interest of the teacher in the financial side of school administration should not be that he or she receives the utmost possible salary, but that the community receives fair value, according to the cost of educational advantages in the current market, for all that is expended. The schoolmaster should have an acquaintance, second to that of no other man in the community, not only with the business side of the schools, but also with the business administration of all other public necessities. He should know what improvements cost and what they ought to cost. He should be informed on the best methods of attending to street cleaning and lighting, sewage disposal, and police service. All intelligent, far-seeing public servants, who are resolved that the community shall make progress as rapidly as is wise, and in the progress get the most for its money, should find in him sympathetic support. His influence should tell for conservative progress, for economical administration, for such improvements as are justified by the financial condition of the municipality, and for such management of improvements as will make them profitable to the community as a whole.

The schoolmaster is not generally very highly regarded as a man of wisdom in the business affairs of his town. He is supposed to be eager to have the town vote for any addition of school facilities, particularly the increase of his salary and that of his colleagues, without regard to whether the town can afford it or not. It is suspected also that at heart

he is an advocate of any method of spending more public money. The general opinion is that his vote can be counted on for any wildcat scheme of municipal financing; that he wants the biggest park, no matter what it costs, and the most expensive library and largest library appropriation, without regard to debt which the town has already contracted.

This suspicion of the attitude of our profession toward public business does us no credit. There are many things which would be very pleasant, very advantageous, for a city, which nevertheless the city can not afford, just as there are many articles which we could use individually about our homes, which we must deny ourselves if we have due regard to our eventual welfare. Many a town has had heavy burdens saddled upon it by the unwisdom of former generations, and those burdens must be carried, even at the cost of present deprivation of benefits of incomparably greater value. The widespread prejudice against taxes on the part of the American public is not altogether unfounded. Indeed the marvel is that we consent to contribute as liberally and uncomplainingly as is our habit for some of the objects to which public moneys are devoted. Every man, woman, and child in the United States pays $2.00 a year for pensions to soldiers of the Civil War. They pay $1.40 a year for warships and their upkeep, which ninety-nine out of one hundred of them never see, and $1.25 each for soldiers, of which they do not feel the slightest use. These expenses are provided by indirect taxation, but it is almost equally a marvel that there is so little complaining against the annual cost of the schools in every hamlet and city, a cost usually greater than for any other public necessity.

The part of a virtuous citizen is not indiscriminate urging of larger expenditures, but wise, shrewd business judgment as to what expenditures are justified, what are really necessary, what will bring in largest return in public benefit. It may be the frequent duty of an enlightened citizen to favor more generous civic support, but his voice will carry farther if he is known to have the habit of scanning carefully every public budget and insisting by all means within his power upon

adequate return for every penny. It will help still further if he is known to have counseled delay now and then in the prosecution of a public work, until the municipal income furnishes better warrant for the expense.

Our American cities and towns are in sad need of intelligent citizens who know when streets are well cared for, and how much their care ought to cost; who know whether a new bridge is needed, and the best way to get the new structure in place most economically; who know something of the administration of charities, and how they can be administered so as not to do more harm than good. The schoolmaster, a public man and the servant of the public, may well be one of those who renders large service to the public by becoming an enlightened and enlightening citizen on all matters of public business, down to the smallest details of administration and construction, and if he possess the saving grace of tact there is no limit to the good he may do by such service. His only care should be to let others take the credit and to keep always a reform or improvement in reserve in the background of his mind, that he may still have the joy of sowing seed when that which he has sown in former years has borne its gracious harvest.

The subject of the teacher and the community is by no means exhausted in consideration of the teacher's civic duties. There are institutions of the community which have a particular claim upon the schoolmaster's regard and interest. The first of these is certainly the Church. No matter how earnest the conviction that public education should be nonsectarian, that the Church should keep her hands off the school and the school should not be required to further in any way the special interests of the Church, it is nevertheless true that the schoolmaster and teacher, as members of the community, have a special duty toward the community's religious effort. For myself I believe thoroly in the total separation of Church and State in the matter of public education. I am not reconciled to it: I accept it with approval and joy. I believe we can have better schools and better children under our American plan than by any other which has been devised.

But the teacher, when he leaves the schoolroom and establishes himself in his home, meets the question as to what attitude he will take toward the religious organizations of the community. In all probability he has been brought up in allegiance to one or the other religious bodies represented in the community, and quite likely he feels a personal attachment to one of them. It is more important for him, as a teacher, to ally himself with his Church, and to support its work intelligently and with self-sacrifice, than it is for a merchant or lawyer to take a similar position. It is of moment to him, as a teacher, what sort of Churches exist in his community, and what attitude the public as a whole take in regard to them. As a matter of fact no American community is likely to rise much higher than its Churches. If they are poorly equipped, illy supported, and if they nourish partisanship and prejudice in their religious activity, or if they are neglected as unworthy the attention of the more progressive citizens, the results are bound to show in public morals and in the conduct of youth. "Like priest, like people," still prevails in our civilization, and is destined to prevail many years.

The mere presence of the schoolmaster in the house of worship makes for dignity in the service, thoughtfulness in the preaching, and progressiveness in the entire congregation. No teacher of standing enters a house of worship that the clergyman does not rise to more earnest endeavor. His presence there increases the respect of the entire community for religious exercises and religious sanctions. The schoolmaster, therefore, can not escape a large measure of responsibility for religious conditions in his town. If the intellectual caliber of the prevailing religious thought is not worthy, it is his work to help make it more nearly worthy. This he can do, not by noisy protest, certainly not by a superior bearing, but as in civic influence, by patient sympathy and by tactful cooperation. As the teacher desires the good-will of all citizens in the work he is trying to do, let him show good-will in what others are undertaking. He need not be a deacon or trustee, altho there is no reason why he should not be, but he should be at least a sympathetic friend.

A schoolmaster is not debarred from fraternal fellowship in the various lodges and brotherhoods, which form so large a part of the social life in many cities and towns. He will be the better for meeting, as a man among men, the members of other professions, the tradesmen, clerks, and artisans whom he is likely to find in such places. If he endeavors to make use of such affiliations to retain his position, or to advance his interests, he will lose his self-respect and deserve the condemnation which the right-minded will visit upon him. But if he avail himself of the opportunity of meeting men, in legitimate relief from his constant association with undeveloped youth, few will be found to blame him, and he will be the better teacher and the better man.

In many rural communities the grange has become an instrument of great good, and wherever it exists it contains possibilities of much public benefit among a class of people who have suffered greatly from lack of cooperation and of opportunity for getting together for mutual improvement. The grange is a farmer's organization, but its membership is not limited to farmers, and it is always ready to welcome any one who comes with a sincere desire to learn better the conditions of the rural population and to assist by sympathetic encouragement the endeavors farmers are making to spread information concerning the improvement of rural life. There is abundant opportunity in every grange to reach a large number of useful citizens in behalf of more intelligent appreciation of educational movements. There are no citizens in America more sincerely desirous of promoting education, more willing to further better education according to their means, more eager to learn what is doing in advanced educational circles, than the American farmers. The schoolmaster who takes the trouble to extend his knowledge to them, and to solicit their assistance and good-will in a friendly spirit, will find himself largely repaid. The programs of the grange offer one of the best platforms for the discussion of public questions, and particularly questions affecting the schools. If the farmers are the "stay and strength of the nation," as Mr. Roosevelt said in constituting the Country Life Commission, the American

teachers could do far worse than to lend to the farmers' organization their frequent voice in the direction of wiser public sentiment.

It may appear that it should go without saying that the schoolmaster should be the ally of the public library and the intelligent supporter of progress in all library affairs. Certainly no teacher would take a position of public hostility to the library, or designedly do aught to diminish its influence or usefulness. It may be surmised, however, that advanced friends of the library movement do not find in school leaders quite the support they feel they have a right to expect. Too many school men, take them by and large over the country, are comfortably content with local library conditions that are wofully unsatisfactory from the point of view of the best library science of today. There are too many teachers who have most inadequate knowledge of what a library should be to the life of the community, and many do not possess the simple information which would enable them to make full use of the library for their own purposes, and are therefore not in position to instruct their pupils in library investigation.

The time is approaching rapidly when every community will have its public library, when a town or village will no more think of getting along without a library than without a school or postoffice. The libraries of the future will serve all classes of the population, and will contribute to artisans and mechanics, farmers and merchants, the latest and best information bearing on their several pursuits. These libraries will reach every family in their town or district, just as the school system reaches every last child. I look for the establishment of library free-book deliveries, as extensive as the rural delivery of the mail, so that the remotest farmer's wife can have a novel less than five years old at least once a month, and the farmer himself can profit by the best scientific treatise on dairying or poultry.

The school man should be the friend of this movement. He should cooperate with the library as it is, in whatever town or city he finds himself, and particularly should he favor the service of a librarian of the informed sort, not some unfortu-

nate relative of a friend of the donor of the building. An effective library is 75 per cent. librarian, 20 per cent. books, and 5 per cent. building: the teacher should know that proportion and lend his public influence accordingly.

Yet after all it is a spirit that is needed, not alliance with particular public movements, or especial skill in definite directions. The teacher should be the mediary between the best forces in the nation and its myriad homes of well-meaning men and women. Whenever a call goes forth for better civic life, whenever the method is made evident by which prosperity can be extended and advance effected in any direction, the teacher should offer himself as an instrument by which that progress can be registered in the actual life of the people. The school is set for the uplift of the nation, and for every part and element of the nation. Its mission is not to a fraction of the people. Its work is not with a cross-section, those from five to fifteen or twenty. The youth are but the ambassadors it is set to train for the conveyance of its message of light and helpfulness to every last man of the nation. There is a glory and zest in this task which may well thrill the teacher with a sense of his privilege. All the greater should be his rejoicing that the work is not to be performed with observation. Not with loud cries of reform and change need teachers set themselves to the endeavor, but with the quiet resourcefulness of those who know that all good things come slow and come hard, but come most surely thru changes wrought in the minds and hearts of oncoming youth. Let the schoolmaster lose not the greatness of his work, and the greatness that may come to him through his work, by exclusive attention to the technique of his art; let him remember rather the obligation of the teacher to the community, and claim the privilege of leadership in all that makes for a nobler national life, committing himself unreservedly to the personal character that is sufficient for that high and sacred task.

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## IV

## PHYSICS IN THE COLLEGE COURSE[1]

In attempting to contribute to the solution of the complex and perplexing problem of determining the aims of teaching physics in universities, I assume that by universities are meant those present and future institutions that serve humanity not only as treasure-houses of the wisdom of the past, but also as active leaders and promoters of the progress of civilization. In the past, universities have too often so clung to traditions that they have had to be forcibly dragged along at the rear of the advancing procession. But now the real university lives to lead humanity to the satisfaction of its needs of all kinds in the broadest, most far-sighted, and most scientific way. It devotes its energies without stint to the impartial investigation of every human problem, physical, intellectual, moral, religious, and social; and rests not until in each case the evidence is all in and the question is temporarily settled. Its gaze is ever directed forward, and it recognizes that scientific study alone can give it the prophetic vision by which it predicts and forms the future.

This being the nature of the real university of today, the problem before us can not be settled on the basis of custom or tradition or authority—it must be solved by a thoro study of all the factors involved. Therefore, the aim of physics teaching can not be defined from theoretical conceptions of what young people "ought to do," nor from ideas of what physicists "ought to know"; nor yet from notions of what a "general view of the field of physics" looks like.

For all of these points of view are partial; they take account of only the least important half of the problem; they assume that a mere acquaintance with the facts and current concep-

[1] The first article in this Series on college subjects, on *Geology*, appeared in the EDUCATIONAL REVIEW for April, 1910.

tions of physical science is the most valuable asset that physics can bestow upon a student, no matter what his tastes and inclinations may be. They take account only of the intellectual phase of the acquirement of knowledge, and fail to recognize the equally important phases of feeling and volition. Provided a student is able to reproduce on examination statements describing the things he ought to know, it makes no difference from those points of view whether he has learned them with feelings of fear, of admiration, of disgust, of curiosity, of wonder, or of ambition; or whether his inner purpose in studying was getting a credit, fooling the teacher, self-satisfaction, knowledge, or service to mankind.

It must be clear, however, that feeling and volition are all-important phases in the acquirement of knowledge; and, therefore, a recognition of their functions is necessary for education. They are the sources of the individual's activities—they determine his interests, his scale of values, and the perspective of his world picture. Unless the feelings are healthily controlled and guided, they may unhealthily control and guide. Hence any useful definition of the aim of teaching physics must recognize the importance of suitably training feelings and volition as well as intellect. The statement of the aim here adopted is due largely to Mr. Dewey, and it applies equally well to physics teaching in the lower schools, the aim in all being essentially the same.

The aim of physics teaching in universities should be to build up between each individual student and the physical world that active relation which is the sole condition of his getting at its meaning and learning to control it. What does this aim involve? What are the essential elements in the process of establishing the desired active relation between the individual and the physical world?

The first essential element in the process of establishing the desired relation between the individual and the physical world is that the individual should have the right feeling toward the phenomena of Nature. All teachers know how deadening the prevalent *blasé* spirit of the student is: fear or contempt is not likely to foster the development of scientists. The true

feeling to be cultivated in this case has thus been defined by Mr. Dewey (*Psychology*, p. 303 sq.):

"Intellectual feeling, like all feeling, takes the form of an interest in objects. It is directed outward; it can find its satisfaction only in an outgoing activity of self. Intellectual feeling, considered in this respect, is wonder. Wonder is the attitude which the emotional nature spontaneously assumes in front of a world of objects. The feeling is utterly incomprehensible as a purely personal or selfish feeling. Wonder is the first and the final expression of the individual as it finds a universe over against it."

"Wonder is the emotion experienced before all objective orders whatever. We feel a challenge to our intelligence. We find an appeal made to our minds to discover what exists there and why it exists. . . . Wonder is the sole spring which can take a man beyond his subjective states, and put him in that active relation to the world which is the sole condition of getting at its meaning. . . . It is not only the originator, but it is the continuer of science."

"Wonder is the simple recognition that objects have significance for us beyond the mere fact of their existence. It is accordingly the spring to that activity which shall discover their significance. A wide development of the feeling of wonder constitutes disinterestedness, the primary requisite for all investigation. . . . It is vitiated by the presence of any merely personal interest. When the activity occurs not for the sake of the object but for the sake of satisfying the personal emotion of wonder, we have, not disinterestedness, but curiosity."

"Curiosity is an abnormal feeling. It is possible, however, for intellectual feelings to assume still more unhealthy forms. Such we have when knowledge is sought for the gratification of vanity, or for the sake of show or power. A more subtle form is that distinctly nineteenth-century disease, the love of culture as such. . . . Culture of our mental powers is made an end in itself, and knowledge of the universe of objects is subordinated to this. . . . Here, as in all such cases, the attempt defeats itself. The only way to develop self is to make it become objective; the only way to accomplish this is to surrender the interests of the personal self. Self-culture reverses the process, and attempts to employ self-objectification or knowledge as a mere means to the satisfaction of these personal interests. The result is that the individual never gets outside of himself."

No one can fail to recognize the importance of this first element in the process of building up the right sort of an active relation between the individual and Nature. Small children are filled with the feeling of wonder. They lose themselves in the objects that interest them, and are intent on finding their meaning,—what is it for? what can I do with

it? Children learn rapidly in the kindergarten and the early grades. But they seem to lose their sense of wonder before they reach the high schools. Later it may be partially acquired again, and it may be aroused even in high school and college students by skilful teachers. The great problem of science teaching at present is that of finding out how to preserve and keep living the feelings of wonder.

The greatest service the university can perform in this matter is to see to it that those who are prepared within its walls to teach in the lower schools shall both acquire this feeling themselves and understand the importance of preserving it in the children in the grammar and the high schools. This is the most important service, because such large numbers of children never reach the higher schools, so that if they have had their feelings of wonder at nature crushed out in school they have forever lost one of their greatest treasures—the potential source of much of life's happiness. But not only is this loss great to the individual: it is great to society, especially in commercial relations. If there were more genuine wonder and its accompanying absence of selfish feeling in commercial life, the present "curse of commercialism" would lose its sting. No more potent means of fostering the spread of the scientific spirit among the masses than that of preserving the feeling of wonder among children could possibly be found.

But this care for the work of the lower schools is no less important to the research activities of the universities themselves. How many potential scientists are annually turned away from the pursuit of science by having their youthful feelings of wonder killed out by "scientific" formalism and the too early enforcement of rigor and logic! The compound microscope and the mathematical formula are so easily converted into weapons of death! Entrance requirements and syllabi are such ready means for embalming an otherwise living subject! If university teaching of physics engendered feelings of wonder in college students, and if universities made it their first care in their relations to the lower schools to see that that feeling was preserved and fostered there, the

research spirit in the university would flourish as never before.

The practical problem of how to secure this result is one that can be solved only by experiments in teaching. Until such experiments have been made on an extensive scale, no one will be able to say just how the teaching of physics shall be done. It is probable that methods that are found useful in one locality will fail completely in another. For this reason efforts at a too rigid uniformity are a hindrance to real progress. As in physics, so in education, hypotheses and theories will have to be tested by careful and well-organized experiments. Universities can be of the greatest service in organizing and making these experiments,—nay more, this is one of the hitherto unexplored fields of research in which universities can be of the greatest possible service to humanity. Research in education is even more important to humanity than is research in medicine.

But the attainment of the end set forth above has other necessary elements besides the preservation of the feeling of wonder. This is but the beginning—the precurser of science. It remains to consider what science is. Having secured a right feeling toward Nature, how proceed to get at the meaning of natural phenomena and to build up an interpretation of the physical world that shall be an inspiration to the individual life? What, then, is science?

It is easier to tell what science is not than to define what it is. Spencer's definition of science as classified knowledge is clearly inadequate, and has led Spencer and others to a serious misapprehension of the aims of science teaching. It has produced the widely accepted but false tradition that for educational purposes subject-matter is the effective element of science, whereby education has been identified with the amassing of ready-made information.

The fallacy of this idea has been exposed by Mr. Dewey (*Science,* Vol. 31, p. 121, January 28, 1910), who shows that science means both the body of classified knowledge that usually is considered to constitute science and the "processes by which something fit to be called knowledge is brought into existence and introduced into the flux of experience." "But,"

adds Mr. Dewey, "in the order both of time and of importance, science as method precedes science as subject-matter. Systematized knowledge is science only because of the care and thoroness with which it has been sought for, selected, and arranged. . . . Surely, if there is any knowledge which is of most worth, it is knowledge of the ways by which anything is entitled to be called knowledge instead of being mere opinion or guess work or dogma." Again, "Scientific method is not just a method which it has been found profitable to pursue in this or that abstruse subject for purely technical reasons. It represents the only method of thinking that has proved fruitful in any subject."

These quotations give us the answer to the first question. Science, of which physics is a part, consists primarily in that method of thinking which has proved fruitful in every subject, physics included. Therefore, one of the elements in building up between the individual and the physical world that active relation, which is the sole condition of getting at its meaning, is to train him in that only fruitful method of acquiring knowledge that is fit to be called knowledge. This does not mean that we should try to "send forth our students equipped as judges of truth and falsity in specialized scientific matters, . . . but that they should have some idea of the kind of evidence required to substantiate given types of belief. Nor is it absurd to expect that they should go forth with a lively interest in the ways in which knowledge is improved, and a marked distaste for conclusions reached in disharmony with methods of scientific inquiry."

This only fruitful method is the well-known scientific method of solving problems, and need not be described here. Training in the method is acquired by solving problems according to it. It is evidently of fundamental importance that the problems solved shall relate to objects that arouse in the student feelings of wonder. They must be problems not too remote from his previous experiences and knowledge, lest the solution be too laborious and the wonder die out before the solution is reached. This is but another way of saying that the problems solved must be significant to the student,

so that his wonder may develop into a desire to find the solution.

Another important and often neglected point is that the student must not be told the answer or dogmatically corrected if his first solution seems to the teacher to be wide of the mark. By skilful questioning he may be led to think out his own fallacy; or he may be directed to further evidence and thus trained in the habit of weighing evidence and verifying conclusions.

These statements do not mean that the student must find out everything for himself. He can be led along much faster and with equal educational value. History shows that scientific problems have been successfully solved and new and valuable conceptions introduced by men who knew how to distinguish between the value of what they had read or been told, and that of what they had themselves observed or experienced. Persistent independent observation is a first essential. In developing his own world picture and getting his own meaning of the world, these two classes of facts are for the individual of widely different value. Unless he learns to distinguish between their values, he sacrifices originality, deadens imagination, and adds one more to the crowd of those who find it easiest to follow along in the beaten track.

But besides the element of scientific thinking, physics consists of a classified body of subject-matter which Spencer called organized knowledge. This subject-matter is not to be treated simply as a product of scientific thinking that is useful in manufactures and industry—because of its practical applications—notwithstanding the fact that the study of physics has been defended on these grounds, and that "commercialism" is driving many to talk of "making physics practical" for this reason.

While practical applications are a valuable element of that knowledge, and a good starting-point for the study of physics, as history shows, and while they should not be neglected, they are by no means the whole thing, nor even the most important element in the use that has been made of the knowledge that results from scientific work.

Experience with Nature has furnished us with mental pictures of things and their relations. We give names to these things and describe their relations in words. We then use the same names and words to describe mental and spiritual phenomena. In doing this we assume that some sort of an analogy exists between the operations of nature and those of mind. Language is full of terms that apply to the phenomena either of the external physical world or of the internal spiritual world. Examples of this duality in the use of language are too numerous to need citing,—such as a bright idea or a bright light; a warm fire or a warm heart; a keen mind or a keen sword. Expressions like splitting hairs, building air castles, kindling enthusiasm, jumping at conclusions are further samples.

For science teaching, the importance of this duality of language lies in the fact that we understand the meaning of words and phrases more fully and completely the clearer our mental pictures derived from the physical world are. This same conclusion applies to laws and principles, regarded as knowledge. So the ultimate use to the individual of the knowledge derived from physics does not lie in the increased physical comfort of life; nor yet in our greater control of the forces of nature. These are but the external signs of the results of the problem-solving of science. The real use of these results of scientific work is that of furnishing the mind with a concrete, ordered basis for abstract organized thought. The concrete pictures of system, order, and organization, which result from the scientific study of natural phenomena, are necessary to system, order, and organization in the worlds of the intellect and the soul. Were the natural world a physical chaos, the mind would be a mental chaos and the soul an ethical chaos. The fact that the modern soul is somewhat of an ethical chaos is thus in part the reproach of modern science teaching.

This conception of the use of scientific knowledge may be illustrated by many, many examples. Perhaps the most striking is that of the establishment of the Copernican system of astronomy. This piece of scientific work may be said to be

encumbered with a minimum amount of practical use; but its use, as furnishing a concrete picture of a system of order, organized about a central body which is the life of the whole, has performed services of inestimable value in revolutionizing religious concepts. The doctrine of evolution is another of those great ideas that have revolutionized thought life. After Darwin had embodied it in definite mental pictures of natural processes, it became the basis of and furnished the terminology for an understanding of the higher and less tangible relations. The doctrine of energy bids fair to become another of these great ideas, as soon as it has stept forth from the mist of mathematical symbols which now hide it from the vision of most men, and become embodied in clear mental pictures of physical processes which will be intelligible to all.

The idea underlying this conception of the use of scientific work is similar to that on which Froebel bases his mother play and kindergarten games; since these are given to the child to furnish him, thru his own personal experiences in living them, with mental pictures of personal relations which he is to meet in his later life; thus preparing the way for a real comprehension of those relations. Much of the unreality and the emptiness of modern, religious, organized life is doubtless due to the failure of science to have stored the mind of the modern man with suitable mental pictures of physical law and order during his early education.

Since the content of the words and phrases that we use in language is thus determined by the mental pictures that we have formed from our concrete experiences with physical nature, it is of the greatest importance that those pictures be clear and definite. To teach the student words and phrases, without first having supplied him from personal experience with nature with the clear mental picture of the process that the words describe, is to deprive him of the power of clear thought. He then falls a victim to that verbalism—the loose use of words whose content is vague and hazy—which is the source of superficiality. From the study of physical phenomena the student should carry away first of all a clear mental picture of physical processes as such. Only when this has

been done do the statements of laws in words and in mathematical formulas have a content that will enable him to use them intelligently in scientific work, and to apply them with meaning in descriptions of mental and spiritual phenomena. These clear pictures that are derived only from experience are the gold reserve that renders our currency of words secure; without an adequate gold reserve, the verbal currency becomes inflated, and we suffer all the evils of wildcat money.

The practical problem of finding out how to select subject-matter and to lead students to define problems that are significant to them, and whose solutions will foster habits of scientific thinking, and leave an adequate gold reserve of clear mental pictures derived from concrete experience, is another of those problems that can be solved only by experiments in teaching. So again we come back to the conclusion that one of the greatest services that universities could do for society would be to organize and carry out such experiments. Scientific research in education is alone able to furnish the solution so much needed at the present time.

There is one other element that is essential to placing an individual in that active relation with the world which will make him able to get at its meaning. This is knowledge of the history of science in civilization. Universities have not yet paid much attention to this subject. Yet it is the most potent means of showing the functions of science in human life, and of suggesting the means of attaining the aims of science teaching as herein set forth. All the conclusions of this paper are illustrated and verified by the history of science. This, then, is another great field of research in which the universities have large opportunities of being of direct and lasting service to education. The study of the history of science should be encouraged and university graduates should not be permitted to go out to teach science unless they have learned, from a study of the history of science, what the significance of science to humanity has been. History of mathematics is cultivated to a considerable extent here and abroad; but, so far as I know, history of science is almost neglected.

Having now discust the elements essential to building up

between the individual and the world that active relation which is the sole condition of his getting at its meaning, we have still to show how those elements are also essential to learning how to control the world. The importance that has here been given to arousing feelings of wonder and a genuine interest in the study will lead many to cry: "Vaudeville! Amusement! Where does the discipline come in? The pupil should be set at 'hard tasks,' whether he likes it or not, and forced by external coercion and fear of punishment to continue at them until he has mastered them. Men have to do disagreeable things all their lives, and the sooner they learn to do them from a 'sense of duty,' the better."

This misunderstanding of the relations between interest and discipline has arisen from the idea that after subject-matter has been selected, then it must be made interesting. This idea has led many teachers to try all sorts of artful expedients to get the pupils to pay attention to subject-matter that was selected from an adult point of view of what logical arrangement is and what pupils ought to know. When attention is secured in this way, it is usually divided attention; while working his physics problem he is thinking of the last ball game or the next dance. Fear of punishment or of failure to pass the course may make him work more, but is a very uncertain weapon to use in securing that undivided attention that is so necessary to true discipline and the development of initiative.

The common practise of resorting to fear as the motive for securing attention has led many to confuse the idea of discipline with that of punishment. When a boy is spanked or locked up or kept after school, it is usual to say "he is being disciplined." True discipline, however,—the kind that develops power and initiative,—is secured only when the task imposed is significant to the individual and the difficulties to be overcome are inherent in the nature of the task, so that he attacks and struggles with them in order to accomplish a purpose that he really desires. The conquest of nature, when properly presented, is a significant problem to most people, and it is beset with all kinds of inherent difficulties which furnish ample opportunity for true discipline. Every teacher of

physics is familiar with the boy who can not be driven away from work, once the right motives are set going. On the other hand, every teacher also recognizes that there is much ground for the current notion that college students get their most useful discipline in college from managing teams, editing the college paper, or arranging social functions. These activities are significant to students; their successful performance is beset with difficulties that are inherent in the problem; they therefore do give excellent discipline.

The problem of finding out how to present physics so that it will be a source of true discipline to students is another problem to be solved by experiment. This problem will not be solved by any method of external coercion in which fear and divided attention are sure to be prominent. When we recall that industry precedes science in the early stages of its development, we may look for some light on this subject from those experiments now under way in Chicago, Cincinnati, Fitchburg, and elsewhere, in which the students spend part of their time in school and part in real industrial work in neighboring shops and factories.

To summarize: The aim of teaching physics in universities should be to build up between each individual student and the physical world that active relation which is the sole condition for his getting at its meaning, and learning how to control it. This may be accomplished by, first, arousing and preserving the natural feelings of wonder which furnish an impelling motive for study; second, leading the student to define problems that shall be significant to him, and whose solution shall give him true discipline and train him in scientific thinking; third, insisting that all scientific work shall leave clear mental pictures of physical law and order, and, fourth, inspiring the learner with enthusiasm by means of historical pictures of the struggles by which humanity has mastered nature and achieved science. To find out how to do this efficiently, scientific research in education must be fostered. Such research is no less important to humanity than is research in medicine, if we would completely realize the ideal of *mens sana in corpore sano*.

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# V

## STATE NORMAL SCHOOLS AND THE RURAL-SCHOOL PROBLEM

Last year the writer tried to discover the attitude of the state normal schools of the United States towards the rural-school problem. The question arose in connection with a study of present tendencies in rural-school administration. Statements are extremely common that rural schools generally are far behind city and village schools, and that relatively little attention is being devoted to this important branch of education. In view of this charge of waste and inefficiency in rural schools, the question as to the part that state normal schools take towards correcting these defects seems warranted.

To secure reliable information on the question the following methods were employed: (a) Interviewing persons connected with normal schools. This procedure is, of course, when properly employed, unsurpast as a means of getting at an educational situation. The writer was fortunate in being at Teachers College, Columbia University, where large numbers of teachers representing practically all the states are to be found. (b) A second method consisting in reading the catalogs of a large number of normal schools, and lastly (c) personal letters were addrest to some thirty-six persons connected with normal schools and who are, therefore, of necessity more or less prominently identified with movements in their states for the betterment of public schools.

The catalogs of eighty-five state normal schools widely separated in the states were examined. It seemed unnecessary to read all portions of the catalogs, consequently the following sections when present were read: 1. Preface, introduction, or purpose of the school. 2. List of instructors. 3. Course of study. 4. Discussion of course of study. 5. Training of stu-

dent teachers. In reading these sections the following five points were kept in mind: 1. The teaching of subjects over and above those of general teaching utility and of special aid to the rural teacher. Agriculture, home economy (domestic economy), rural-school management, and rural sociology are clearly of this nature. 2. Subjects of doubtful utility in the preparation of elementary school teachers. Surveying and stenography come under this type. As to placing Latin in this group, there would be some disagreement, altho there is a noticeable tendency to demand less and less of this subject of those preparing to teach in the elementary grades. 3. The teaching of a subject, or part of a subject, when the substitution of a different subject would presumably more largely contribute to the teacher's equipment. The substitution of home economics or agriculture for advanced algebra, or the omitting of some portions of technical English grammar for additional language work and the study of reading matter for different years would be cases in point. 4. Training under conditions closely resembling rural-school conditions: the observing and teaching in a rural model or practise school meets this condition. 5. Mention of any sort of the rural-school situation.

Clearly topics two and three would deserve considerable notice in an exhaustive discussion of the amount of attention bestowed by normal schools on the needs of the rural school, and any use that might be made of them, without an extended weighing and balancing of their merits, would invalidate the whole question at issue. The teaching of questionable subjects and the amount of the different subjects taught will not for this reason receive consideration in this article.

In the following table is tabulated the results of reading the catalogs of the 85 normal schools located in 38 states and territories. The table calls for little explanation. For instance, there are 31 schools teaching agriculture, which is 36.5 per cent. of 85, the whole number of schools studied: these 31 schools are located in 19 states, or 50 per cent. of the whole number of states (38) reported on. The other subjects are reported in exactly the same way. Attention

should be called to the following facts: namely, that only 11 normal schools maintain model rural schools; 21 schools report in their curriculum sociology of some description. But a very small percentage of these schools appear to be teaching a kind of sociology that bears in any particular way on rural conditions.

| | | Per cent. of whole number (85) | Different states taught in | Per cent. of whole number of states (38) |
|---|---|---|---|---|
| Number of schools teaching agriculture | 31 | 36.5 | 19 | 50 |
| Number of schools teaching any form of home economy. | 17 | 20 | 14 | 39 |
| Number of schools teaching sociology | 21 | 24 | 15 | 42 |
| Number of schools giving training in rural schools | 11 | 13 | 7 | 18 |

Considerable care was exercised in reading the catalogs. Nevertheless, these figures and percentages are little more than general statements. That this must be true is evident from the following considerations: 1. The catalogs were in most cases two and in some instances three years old. We would naturally expect some change in normal-school courses in a period even as brief as two years. 2. During this period the matter of improving rural conditions has been much mooted in press and on platform. Normal schools would hardly remain entirely indifferent to public opinion. 3. It is not safe to dogmatize concerning normal schools from their catalogs. Some catalogs do scant justice to the institutions issuing them, while others are evidently compiled very largely for advertising purposes. 4. The catalogs of only 85 of the 190 and more state normal schools are reported on. While those reported on are distributed in 38 states and territories, it is probable, had a larger number been examined, the ratios would have been different: it is equally probable, however, that the percentages would have been less favorable to normal schools for the reason that the catalogs examined included practically all of the more progressive schools. 5. It is evident that some normal schools, the number is uncertain, have of late been actively engaged

in studying rural-school problems. All of these, however, for one reason or another, have not reached a point in their study where they have cared to make statements to that effect in their catalogs. Consequently, to judge the attitude of normal schools toward a question from a study of their catalogs, is sure to be accompanied by uncertainty and disappointment. There is little uniformity among normal schools in their manner of reporting different features of their work. In so important a matter as the time devoted to different subjects, one can not in the case of certain very good schools determine from their catalogs the time devoted to particular subjects. The character and extent of the training are often given in so loose a way that the reader can gain no idea of just what the school stands for in this most important feature of its work. The above results have therefore a certain value only.

To secure anything like definite information as to the extent normal schools regard special preparation for rural schools desirable, in addition to personal interviews, letters were addrest to thirty-six persons in different sections of the United States. The correspondence revealed a somewhat wider interest for better rural-school teachers than was promised from reading the catalogs. All persons addrest with one exception replied, and often the replies were of some length.

In 1905 Henry Sabin addrest a letter to O. J. Kern in which he discust the rural school. In his letter he gave utterance to the following rather gloomy outlook: "If we ever have time to do anything for the country school districts, the first step must be to separate them from the city schools, to give them a course especially adapted to country life, and to place in them teachers who are capable of giving that kind of instruction. As far as I know, there is not a normal school in the land making any attempt to supply teachers for the country schools." Today there is evidence of a number of first-class normal schools doing, or about to do, the very thing Mr. Sabin had in mind but could not at that time locate. From the valuable replies received, just enough excerpts will be given to indicate the present attitude of those concerned with the movement of preparing teachers for rural schools.

In response to a letter addrest to Hon. George H. Martin, of the Massachusetts State Board of Education, the following excerpt from the forthcoming state report was sent: "Until recently it was thought that observation and practise in highly organized graded schools furnished ideal conditions for normal-school students, and opportunities for such practise have been provided. Now it is seen that the graduates who go out into ungraded schools have to face wholly new conditions. In the effort to adjust themselves to their environment there is a waste of time and strength, and their training counts for less than it ought. In order to strengthen the normal schools at this point, arrangements have been made with school authorities in several towns by which some of their ungraded schools may be used by the normal students for observation and practise." A principal of one of these schools, in speaking of the value a recently established rural model school has been to his institution, makes the following statement: "I do not consider the system of observation and practise schools connected with any normal school complete without some provision for this kind of experience."

The State Normal School at Emporia, Kan., "regards the preparation of rural teachers as a special problem," and as a consequence maintains a model district school as a part of its model school system at Hays, Kan., and will in the near future establish another model district school at Emporia. Last year there was organized in connection with the spring and summer term a Rural School Teachers' Association. The association was under the direction of the normal school teacher of rural-school management. Meetings were held weekly in which rural-school problems were discust. An officer of this institution writes, "In reply to your specific question as to the popularity of our courses in rural-school management, I will say that the work is received with great favor, and we have had in the past two years many hearty expressions of commendation as to what we are seeking to do for the rural schools."

The State Normal School at Terre Haute, Ind., has for five or six years maintained a rural practise school. In speak-

ing of this phase of their training work President Parsons writes: "We think the addition of this school is the best thing we have ever done for our normal-school work. The great body of our teachers, of course, teach in the country schools and this school gives them the opportunity to observe and practise in just such schools as they are expected to handle when they leave us." The rural model school is in charge of a broadly educated woman, who is able to organize and to skilfully carry thru the ordinary complex rural-school program. The school "affords first an opportunity for student teachers to study the country school problem in a first-class school; second, it affords good standard country school work for teachers and school officers to visit, and this gradually elevates the standard of country school work; third, it meets in a practical way the question we are asked so often in normal classes—'This theory may be all right for city schools, but will it work in the country schools?'"

The Kalamazoo (Mich.) State Normal School maintains a department of rural schools under the direction of a man who has made rural schools and their needs a special study. The school offers two rural courses, the elementary and the advanced course. The purpose of these courses is to fit teachers for efficient service in rural schools. This school gives a course in rural sociology extending over twelve weeks. In addition to this regular course the rural students are organized into a social and educational society known as the Rural Sociology Seminar. Within a ten-minute car ride of the normal school is a rural model school in which students of the rural-school department are asked "to devote the maximum of time compatible with other school duties."

Two of the Connecticut normal schools are at work on the rural-school problem. The one located at Danbury maintains two rural model schools in which those intending to teach in rural schools spend a month in observing and practising under expert direction. In addition to this specific preparation for teaching in rural schools, the supervisor of training maintains a rural help department to assist the graduates of this school and others teaching in rural schools. The aid rendered by

the help department is somewhat varied. The loaning of sets of seat work, reading leaflets, suggestions concerning drawing, assistance in arranging daily programs and visitations are typical of the work of this department. More than one hundred and fifty rural teachers availed themselves of the free assistance of this department the past year.

The first normal school of Missouri at Kirksville has a model rural school on the campus. The building itself represents a good deal of thought. It has many of the conveniences found in the better city schools, yet the effort has been to secure devices that can be installed in many rural-school buildings. This building can be duplicated in many sections of the United States for $1,400. The practise exists here of bringing the children daily in a conveyance from the country to attend the rural school on the campus.

The State Normal School, Kearney, Neb., recognizes that it has two distinct problems in the training of teachers: "the one pertaining to the city schools, and the other to the rural schools." President Thomas defines their treatment of those preparing for rural schools as follows: "We lay special emphasis upon the organization and management of both of these schools. We also give assistance in practise teaching, as well as observation in schools containing several grades, representing schools with which the rural teacher may deal. We deal also with reports to county superintendents, with school property, and with school law affecting the teacher and boards of education in the management of schools. Besides this, we give observation work, general conferences, and methods along these lines. We generally have separate classes for those who wish to teach in the rural school and those who wish to teach in the city schools." Likewise the school at Peru, Neb., organizes separate classes exclusively for rural teachers in which rural problems are carefully discust.

The Cheney State Normal School of the state of Washington has established a department of rural schools and called a successful county school superintendent to organize the department. This normal school feels called upon to consider the needs of all the teachers of the state. It believes the rural

and village schools are in greater need just at present than the city schools.

Some few normal schools, especially in the Middle West offer rural-school courses. The Central Normal School at Mount Pleasant, Mich., provides a good type of this form of aid to rural-school teachers. "Students are admitted to this course without examination who can give evidence that they have an equivalent preparation and are able to do satisfactorily the work demanded by the course." The catalog states this course contains agriculture, rural-school management, rural-school arithmetic, rural-school drawing, rural-school manual training, etc.—all the subjects being taken up from the rural-school standpoint. About a third of the whole number of students in this normal school are registered in the rural-school course.

At Macomb, Ill., pioneer work has been going on since 1906 in what is known as the Country Training School, a school under the direction of the Western Illinois State Normal School. The object of the Country Training School is set forth in a circular in these words: "The first and immediate aim was to take up a typical, needy, inefficient, country school and build it up thru all obstacles to the greatest possible degree of efficiency for the community in which it was located. The second, and general aim was to further the cause of rural education thruout the state." And later on we read: "The guiding motive thruout the undertaking has been that of actual possibility, to show just what might be done in any other country school of the state. To insure this condition two precautions were taken. In the first place, the school selected was a typical, needy, neglected country school taken just as it was. And second, the teacher put in charge was an actual country teacher chosen from the rank and file of country teachers. Under these conditions and the agreement made with the normal-school trustees it is safe to say that what has been done here could be done anywhere." One is tempted to quote the whole pamphlet, so keenly appreciative is it of rural-school needs. While the school has not been going long it has accomplished certain things. The condition

of the school buildings and grounds have been greatly changed: two new out-buildings have been built; a concrete basement has been made under the school; a new furnace, new seats, clock, bookcase, kindergarten chairs, curtains, rugs, piano, etc., have been added. A neighborhood awakening and pride in both parents and children in the school as a local institution have sprung up. It has fired the ambition of quite a number of normal-school students and some are already in rural schools working intelligently along these lines for rural-school betterment. Students have actually volunteered to teach in the country schools.

It must be understood that no attempt is made in this brief article to enumerate all the state normal schools engaged in specifically preparing teachers for rural schools. The only aim is to indicate the present status of the movement by calling attention to a few widely scattered schools that are leaders in the movement. The different specific activities for the purpose of directly preparing rural-school teachers to better perform their duties, may be grouped under the following nine heads. In the normal schools more actively engaged in studying the rural teachers' needs, a number of these activities are often going on at once, while in normal schools less actively engaged in bettering rural-school conditions one or two are usually found. In the great run of normal schools any activities in behalf of the rural school are largely accidental, or incidental to the matter of general training. 1. Some normal schools extend aid to rural-school teachers by issuing printed matter on different topics. The Kansas Normal School, at Emporia, issues under its rural-school management teacher's direction a monthly bulletin. The loaning of library books by normal schools to their graduates is rather a common practise. As before stated, one normal school conducts a rural-help department. 2. Some normal schools, as the Western Illinois Normal School, have lecture bureaus and send different members of the faculty into the country to address and instruct rural teachers and school patrons. The State Normal School at New Paltz, N. Y., began some time ago a "series of educational conferences for the purpose of helping the

country school to become the power that it should be in the new country life now upon us." Country teachers and officials were invited to confer with the normal-school faculty on such topics as home science, traveling libraries, improvement of school buildings, etc. It is reported that New Paltz is not pursuing this course at present. 3. It is possible in certain states for teachers to pursue a course of professional study by mail, and have the work credited. The Willimantic and Danbury normal schools of Connecticut offer this kind of aid to rural teachers. 4. The teaching of agriculture is rapidly spreading among normal schools. Home economy is less frequently taught. The management of rural schools is a subject that has always received a varying amount of consideration in normal schools. Few schools, and they but recently, have given the matter the dignity of being given as a separate course. The following schools are giving rural-school management as a separate course: Kalamazoo, Mich.; Macomb, Ill.; Kearney, Neb.; Emporia, Kan., and Mount Pleasant, Mich. It would be unfair to normal schools to imply that discussions of rural conditions and needs have not always received some attention. But here again the instruction has been neither systematic nor thoro. Apparently, the subject should be assigned to a person trained in gathering, tabulating, and generalizing social facts. This subject has suffered most from its advocates. Like the subject of education all men have deemed themselves competent to discuss social laws and customs and prescribe remedies. At least two normal schools are offering systematic courses in rural sociology, namely, Kalamazoo, Mich., and Macomb, Ill. 5. Summer normal schools are rapidly spreading. All do not as yet pay special attention to the needs of the rural teachers. Macomb, Ill.; Warrensburg, Mo.; Danbury and Willimantic, Conn.; Emporia, Kan., and Hyannis, Mass. are some of the normal schools that appear to be studying the rural teachers' needs along specific lines. 6. Some normal schools, as the Kansas State Normal School, at Emporia, and the Illinois State Normal, at Macomb, have been instrumental in organizing rural-school teachers' associations. At the Winthrop Normal and

Industrial College, S. C., there exists a Rural School Improvement Association which has had a tremendous influence all thru the South in improving rural-school conditions. 7. Some few normal schools, and the number seems to be increasing, offer rural-school courses. These schools take pupils below high-school graduation, even as low as the eighth grade, and enter them in courses named " rural-school arithmetic, geography," etc., fitting them to teach only in rural schools. Frequently, after serving the state two or three years as rural teachers, these persons return to the normal school and take the standard courses which fit them for city schools. Some of the Michigan normal schools offer these rural courses. It is quite probable that some of the Wisconsin schools will in the near future offer some such courses. At Peru and Kearney, Neb., special courses are organized for rural teachers. 8. It is surprizing to find how few state normals afford their students opportunities to observe and study good rural schools. Fortunately the number of normal schools that are adding rural model schools is on the increase. They are found at Salem, Framingham, North Adams, Lowell, and Bridgewater, Mass., Danbury, Conn., Terre Haute, Ind., Kirksville, Mo., Macomb, Ill., Hays, Kan., and Kalamazoo, Mich. Rock Hill, S. C., and Kearney, Neb., are planning soon to add rural model schools. 9. In some respects the most business-like way of dealing with the rural-school problem is by means of a separate department. With a capable and energetic head, rural-school conditions and needs will presumably be better watched over and provided for than when the matter is left to the faculty in general. Three of the four Michigan normal schools and the Cheney Normal School, of Washington, have rural-school departments.

It is interesting to compare these different lines of activity with those which existed two or three years ago. At that time a committee of California teachers took up the study of rural schools and attempted to discover to what extent different states were preparing teachers for rural schools. Questions were addrest to twenty-one state and territory superintendents. It so happens that the list of states and terri-

tories were the same in many instances as those employed in this study. Apparently less than half of the superintendents replied, and those from Iowa, West Virginia, Michigan, and Illinois were the only ones that claimed any sort of special preparation for rural teachers. We see, therefore, that progress is being made. Yet the question arises if normal schools, outside of a very few, are devoting a fair portion of their appropriation to this much neglected phase of public education? This question is fully appreciated by the more advanced normal-school men. The president of one of the more active normal schools for rural-school betterment writes: "We feel, however, that we have as yet done little more than to recognize the need and lay the foundation for a systematic attempt to meet that need. The results so far have led us to feel that we are working along the right lines." And from another correspondent connected with a normal school that has from its very beginning been actively engaged in differentiating the rural-school from the city-school problem, and as a consequence made in some ways considerable progress, we read, "I think we partially realize the problem, but as yet have not done very much towards its practical solution." In certain instances there can be no question as to the seriousness of the attitude of normal schools toward the rural situation, or of the business-like way in which they go about the problem. In the case of other normal schools a determination to specifically aid and extensively help those of their students going into rural schools is not so apparent; the methods employed to find out the rural teacher's needs and the means organized to supply these needs are in no ways adequate to the task. This characterization, of course, does not include those normal schools that are indifferent to the rural teacher's needs, or those that dogmatically say there should be no differentiation, and that a good teacher will teach any school well. One state official makes the following statement concerning the attitude of the heads of the normal schools in his state: "My view is that the normal schools should deal with the rural-school problem. Two of the normal-school principals do not agree with me, and the others have no special interest in the case."

In this discussion the impression may possibly be conveyed that normal schools have from choice or thru indifference failed to measure up to their responsibilities. There is no escaping the conclusion that normal schools, at least the great body of them, must be put to plea for the present state of the rural school. It is of long standing, and one has to search literally from Maine to Oregon to discover the few normal schools actively engaged in studying the needs of the country school. Yet in the search the fact is revealed that normal schools are offering Greek, trigonometry, surveying, conic sections, solid geometry, Spanish, elocution, library science, Chaucer, etc., and are not at the same time offering such subjects as rural-school management, rural-school elementary science, rural sociology, rural-school arithmetic, rural-school home economy, practise training in rural schools, etc. How a state normal school is to escape censure for teaching a subject as foreign to the professional needs of an elementary school teacher as trigonometry and not teaching at the same time rural-school management, is, I maintain, a fair question to raise. And all this in the face of the fact that magazine and newspaper writers, patrons of husbandry, agricultural societies, the United States Department of Agriculture, committees of national importance, women's clubs, and people of country birth now prominent in one walk or another of life are discussing the changes in rural society and the loss in influence and effectiveness of the rural school. Indeed, for the student of education, about the only haven where he can for the moment escape the rural-school problem is in the literature of the ordinary run of normal schools.

The answer to the question why normal schools have not more generally turned their attention to the needs of the rural school is undoubtedly a complex one. Certain factors in the situation, however, stand out with some clearness. 1. In certain states, perhaps in all, there has been a dearth in young people entering the profession thru the normal schools. In the state of Connecticut, for instance, the capacity of the four normal schools is nearly 1,000, yet the total attendance has never exceeded 650. Those graduating from the four normals

in one year has never exceeded 250. The number of new teachers required yearly in the state is about 400, which leaves a demand for 150 to 200 teachers which the normal schools can not meet. It is a case of not enough to go round, and the city schools are the first to be supplied. 2. Other states lack training facilities. Superintendent Morrison, of New Hampshire, states that the normal school is up to its enrollment, with a waiting list of 30 per cent. of the school's enrollment. Here again the rural school fails to get trained teachers, for the question arises, why train teachers for a class of schools into which they will never go? 3. Principals report that their graduates prefer city positions, often flatly refusing to accept positions in rural schools even at the expense of being without a position. 4. In a few states, California for instance, salaries in rural schools compare very favorably with the salaries paid in cities. In a large majority of states, however, rural schools pay much less than city schools. To many normal-school people these latter two factors afford sufficient warrant for ignoring the needs of rural-school teachers. 5. Even when the normal-school authorities recognize their responsibilities to the rural schools, they are not at all sure in just what details the training of rural teachers should differ from that given to city teachers. It is evident that even those schools most actively at work on the problem are feeling their way in an unexplored field. Normal-school authorities sometimes refuse to regard experimentation as any part of their province. 6. It is more and more evident that normal schools have in the past been prone to underestimate the difficulties incident to teaching rural schools. One not uncommonly encounters the opinion that it requires less knowledge to conduct one of these schools than to attain the same degree of success in a city school. In the single matter of making out a daily program a county supervisor has informed the writer rural teachers waste an astonishing amount of time thru unintelligent planning. Ought not normal schools more generally to develop some system of testing the results of their instruction and training? This question opens the way for an endless and profitless amount of wrangling. The question

remains, however, how many normal schools have kept anything more than a very general and hearsay record of their graduates for the past ten years? Normal schools are established to accomplish a definite piece of social service, and there seems every reason for a system of checks and inventories. At least one normal school has a skilled visitor in the field at all times, whose duty is collecting data and ascertaining the causes of successes and failures among the school's graduates. 7. It is a question if many normal schools are sufficiently well equipped to carry on the work necessary to meet the needs of the rural-school teacher. Normal schools have in most cases created organizations to meet the needs of teachers of one-grade rooms. The addition of rural schools for observation and practise is, of course, imperative. But it is doubtful if normal-school faculties as presently constituted are competent; at least, the burden of proof rests with them, for they have not, so far as this study has revealed the situation, with few exceptions, shown any particular understanding or peculiar aptitude for the rural-school situation. Those normal schools that have added to their faculties persons of broad education, years of experience in and with rural schools, and who are endowed with an optimistic view of rural social changes and of the possibilities of the country school, have on the surface, at least, gone about the matter in the most promising way. One principal has stated that in the case of his school, the State Board refuses to supply the means or give its sanction for changes absolutely necessary to an increased aid to rural schools. 8. We are confronted with an interesting situation. The pioneers in the normal-school movement established, as they supposed, institutions that would revolutionize, vitalize, and professionalize the teaching occupation. At this early day of their existence many of these institutions must be regarded as conservative and non-progressive. Not many years ago a study of some of the normal schools of the United States brought out the rather remarkable fact that psychology, which normal-school men have from the first regarded as fundamental in the preparation of teachers, had been allowed to become formal and anti-

quated. Only 24 per cent. of the normal graduates consulted were favorably imprest with the worth of this basic study to the teacher. Principal Murdock, of North Adams, Mass., in 1905, visited not less than twenty normal schools situated in different portions of the East and West and read thirty circulars to discover the attitude of normal schools towards industrial and vocational education. He found all sorts of reasons advanced for the giving of manual work but those that are guiding the movement today. Inflexibility and lack of initiative are serious charges to bring against normal schools, yet students of education find grounds for these criticisms.

Such objections and limitations in the way of special preparation of rural teachers offered by normal schools are by no means trivial, but present real difficulties. None of them, however, are insurmountable. Running thru all of them is a vein of fatalism which seems to say, "What is must be, what has not been can not be!" Whereas, as a plain matter of fact, within wide ranges of human conduct we never know what is possible until we try. Until normal schools in a systematic way set about preparing teachers for rural schools and keep records of the degree of success different kinds of training result in, there is no ground for dogmatism on the matter. If special preparation does not count here, it will be the first field wherein training fails to show results. Indeed, the records of those schools which are beginning at some point in the course to segregate those intending to teach in rural schools from those who will enter highly graded and supervised schools are decidedly encouraging. It is stated that salaries of rural teachers have taken a decided upward turn in the vicinity of one of the normal schools since that institution began offering courses for rural teachers. The reported effect of the Country Training School at Macomb on the community will be recalled in this connection, and that normal students in this school become so vitally interested in rural-school needs that they seek positions in country schools.

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State Normal School
New Britain, Conn.

## VI

## MORAL CONDITIONS IN OHIO COLLEGES [1]

This paper is based upon replies to a questionnaire prepared and sent out by President Welch of Ohio Wesleyan University, with a few questions added by myself.

The American college has been subjected to a sharp fire from critics within and without for the past few years, no one of whom has been more insistent and plain speaking than has Mr. Birdseye in the two books entitled *Individual training in our colleges* and *The reorganization of our colleges.*

Statements in these books concerning moral conditions in our colleges probably influenced the chairman of our committee to ask for this report, that some comparison might be made of the situation in our Ohio colleges with the conditions described by Mr. Birdseye.

It ought to be said that these reports come from college officials, and for that reason would not be accepted as evidence by Mr. Birdseye.

Mr. Birdseye says in his first book [2] that:

1. "The faculty are among those who deny the existence and spread of the evils that are sedulously concealed from them, and which possibly they do not wish to see. There are none so blind as those who will not see;" and in his second: [3]

2. "The testimony of a member of the faculty as such may be, and sometimes has been, found to be practically worthless in regard to these matters, for they are entirely outside his pedagogy, and therefore outside his department."

What follows, then, would be in the main discredited by Mr. Birdseye, but it may be of some interest in serv-

[1] Paper read at the meeting of the Ohio College Association, Columbus, Ohio, December 28, 1909.

[2] *Individual training in our colleges,* p. 191. C. F. Birdseye, New York, 1907.

[3] *The reorganization of our colleges,* p. 124-25. C. F. Birdseye, New York, 1909.

ing to show our own estimate of conditions among our students.

A number of quotations from Mr. Birdseye's *Reorganization of our colleges* concerning moral conditions as he has found them, before reading the results of our questionings, will give a basis for comparison. He says, when studying the subject of college vice:

1. "When I had gathered my proofs together, I was appalled at what I had found in many institutions" (p. 119).

2. "I have had the opportunity to learn the facts as to student life and college homes from Maine to California and from Minnesota, Wisconsin, and Dakota to the farthest south. I have talked and corresponded with hundreds of college professors and officials, students, deans, medical men, and recent graduates." "Conditions differ in different institutions and in different communities at different times. . . . Some are practically free from the evils hereinafter referred to; others reek with them." ". . . Whether or not these evils prevail in a given institution and to what extent is indeed an important question. But even more is the question whether they are being thoroly and wisely studied and treated therein" (p. 120-21).

3. "In many of our larger colleges and universities, and in too many of our smaller ones, a very considerable part of the college home life is morally rotten—terribly so. Some of the smaller and older colleges, with grand records in the past, have as low a standard in student morals as the larger universities. Some of the worst conditions prevail in minor denominational institutions which are presumed to be ultra-religious" . . . (p. 123).

4. "In some institutions from twenty to forty per cent. of the graduate and undergraduate students consort with lewd women, and at least as large a ratio drink to excess at times. The proportions are much higher in the upper classes." "In some instances at least twenty per cent. of the students have been venereally diseased before their course is finished. All these things, with quite too much gambling, are evils of the college home life, and must be fought therein, not by college ordinances. . . . These appalling estimates are based on the carefully sifted estimates of the students themselves in many widely separated institutions" . . . (p. 124).

5. "But another terrible aspect of the social evil in college is that the women are frequently of a low class, . . . almost of necessity diseased and almost as certain to communicate these diseases. From the very nature of the case our college students are not financially able to indulge in expensive luxuries of this kind, and as a matter of fact their indulgences are frequently with such a low grade of women that disease is almost sure to follow. And this is what is happening and for years has been happening daily thruout our institutions of higher learning" (p. 126).

1. "The foregoing are but a few of the examples picked from a mass of evidence gathered by going to the right place, the college home, and by sifting out the facts as carefully as possible, and with a full consciousness of the terribleness of the arraignment of present conditions in the student-life department" (p. 134).

2. "The growth of the drink habit among our students is another chief cause for the lowering of college morals in the college community and home life; and for this, also, the college authorities and alumni are chiefly responsible. . . . Our colleges are in too many instances, directly and indirectly, putting a premium on the drink habit and increasing the toll of our undergraduates who must eventually become confirmed dipsomaniacs" (p. 134).

3. "College and fraternity banquets frequently end in drunken orgies" (p. 137).

4. "The colleges are too often blind leaders of the blind, with low ideals and a terrible record behind them, from which they must be rescued by reorganization" (p. 141).

The above quotations will serve to show the actuating motive in the mind of our chairman in sending out the questionnaire concerning moral conditions. If such charges are being made against college life, it behooves us to study carefully the conditions in our own institutions. The conditions Mr. Birdseye describes are, he says, gathered from a study of the colleges of the entire land, and there is no reason to suppose the conditions in Ohio colleges are specially different from those in other states which draw their students from approximately the same social strata.

The questions submitted to the colleges of this association were as follows:

1. What regulations have you concerning smoking?

2. What per cent. of your male students are addicted to drinking, gambling, and sexual vice?

(a) What does your college do to show its disapproval of these things?

(b) What is your attitude toward cases when they are discovered?

(c) What evidence do the physicians of the town give in regard to diseases from any of these causes in the student body?

(d) How much do they drink?

(e) When? What bearing does fraternity life or athletic victories have upon the drinking question?

3. What bearing have *inter-collegiate* athletics upon the moral conditions in your college?

4. Are you troubled by lying and cheating among the students? If so, in what way? or to what extent?

5. Do you believe the estimate of college moral conditions made by Mr. Birdseye in his book on the *Reorganization of our colleges* to be just as applied to your own college? If not, in what particular is it misleading?

6. Do you believe that the moral life of the college is better or worse than when you were a student, giving date?

There are twenty-one colleges in the Ohio College Association. Three of these are for women only and were not included. Replies were received from all the other colleges, but the reply of Hiram College was received too late to be included in this report.

Seventeen institutions sent replies to this list of questions as follows:

Adelbert College
Antioch College
Buchtel College
Denison University
Heidelberg University
Kenyon College
Marietta College
Miami University
Mount Union College
Oberlin College
Ohio State University
Ohio University
Ohio Wesleyan University
Otterbein University
University of Cincinnati
University of Wooster
Wittenberg College

Before giving the answers to the first question concerning the use of tobacco, permit me to say that it is my personal belief that such a question has no place in a study of moral conditions. As a representative of the one institution of the seventeen that maintains a rule against the use of tobacco, I may say that the reasons for its maintenance are not, to the best of my belief, based on moral considerations.

The answers, however, may be of interest, and I have tabulated them as follows:

Seven institutions have no rule concerning its use; nine institutions forbid its use to a greater or less extent on the campus or around buildings; one specifically forbids the use of tobacco.

The first question asks what per cent. of your male students smoke? One institution says five to ten per cent. regularly, fifty per cent. occasionally. As this is my own answer for Oberlin, may I say a word in explanation. The answer is confessedly an estimate. The rule works this way with us. There is no open evidence of the use of tobacco apparent with us. The average consumption per capita I am sure is very small comparatively; nevertheless, there are doubtless quite a number who smoke quite regularly in the privacy of their own rooms. There is a much larger number who do it as more or less of a "stunt" while off on class stags, excursions into the country, etc. I do think we keep the total consumption of tobacco down to a relatively small amount. What the moral effect of the evasion of the rule is I am not prepared to say.

One says a small percentage. Four say twenty-five per cent. One, thirty-three and one-third per cent. Four say fifty per cent or less. One says fifty-nine per cent. fraternity men, sixteen per cent. non-fraternity men, gathered from an actual count of 202 non-fraternity men and 160 fraternity men. One says sixty per cent. One, seventy-five per cent. And two will not attempt an estimate.

The second general question is as follows, "What per cent. of your male students are addicted to drinking, gambling, or sexual vice?"

One says unable to say. The medical examiner reports two per cent. venereally diseased at some time. One says none that can be seen. Four say almost none. One says drinking two per cent.; gambling, can't estimate, chiefly betting on games; sexual vice, not over ten per cent.—estimate of medical director. One says none known. Two say students promptly dismist for such conduct. One says not over ten per cent., except betting. One says, can give no estimate, but there are few evidences of drinking, none of gambling, and

none of sexual vice. One says comparatively few. One says none. One says very small per cent. One says very few addicted; a considerable number occasionally indulge. One says ten per cent. to fifteen per cent. drink; twenty per cent. gamble, chiefly betting on games; can not estimate the third point.

In answer to the next question, "What does your college do to show its disapproval of these things? What is your attitude toward cases when they are discovered?" all but one report that such cases lead to discipline of varying severity and at varying rates of speed, some dropping the student at once. The implication seems to be that persistent continuation would result in dismissal if known, in all the institutions reporting. The one institution not replying directly says that the attitude of the institution is well known, from which I infer that these offenses are recognized as disciplinary matters. All indicate that the institutions make their positions clear on these subjects, not so many tell just what is being done to combat these vices. Four, however, report specific lectures on personal hygiene. Three report the definite use of student organizations to create sentiment against these things. Two report the work of the physical examinations as helpful at this point. And one—evidently written in somewhat of a hurry—reports practical lectures on personal hygiene and other vices. This last reminds me of the answer received when I was acting on the board conducting the Boxwell and Patterson examinations. The office of the State Commissioner of Education had seen fit to ask some questions on personal hygiene, winding up the query "When is the proper time to bathe?" One honest youth, who evidently lookt upon a constant practise of this sort as more or less of a vice, replied, "Summer-time is the proper time to bathe." This youth has scarcely had time, however, to become a college president, hence I judge the answer is an evidence of hurry rather than the expression of a conviction.

In answer to the next question, "What evidences do the physicians of the town give in regard to diseases from any of these causes?" thirteen report no evidence from physi-

cians. Three report that the physicians say there are very few evidences of disease, far less than in men of same age not students. One says evidence received is of mixt value. There seemed to be a general feeling that the professional obligations of the physician would keep him from giving any testimony of value on this point. That would of course be true if one were seeking evidence in individual cases, or to be used in a disciplinary way, but would not be true, usually, if one were seeking general information in order to remedy conditions.

The next question, "How much do they drink?" refers to students and not to physicians. I think I am probably responsible for its apparent curiosity concerning the bibulous habits of our practitioners. After President Welch had prepared his list of questions, a few were sent on as suggestions, and this one was apparently tucked in by the compositor where it would best fit.

The majority, I think, interpreted the query as it was intended, and when thirteen report "Very little or almost none," I apprehend that the answer applied to students and not physicians. One says, not excessively except on occasions. One, no evidences of any drinking. And one optimist says, "Not at all"; while one stickler for truth reports that in his opinion "The local physicians do not drink at all." An interesting item, and one, I am sure, upon which the members of this association congratulate him. I can not help thinking that in some far-away period the writer served an apprenticeship in correcting freshman themes.

To the next question, "What bearing has fraternity life or athletic victories on drinking?" twelve report no bearing. One says very little, they may celebrate victories abroad. One says, perhaps encourages, can hardly say discourages. One says greater danger in social occasions and celebrations. One says fraternities a restraining influence, victories a temptation. One says a large proportion of those who drink (estimated at not more than ten per cent. of the whole) are fraternity men, but they do not drink in the fraternity houses.

The reason for the next question, "What bearing have

intercollegiate athletics upon the moral conditions in your college?" is found in the charges made by Mr. Birdseye in Chapter XXIII in his first book, too many of which have been true and some of which are still largely true. If, in addition to the remedies attempted by the Rules Committee and the Intercollegiate Athletic Assocation, the colleges of the country would unite to purge football of its professionalism, to do away with the men who make their living on the sport, if we could do away forever with the whole "following" of professional coaches, trainers, boards of strategy, etc., it would work a revolution in our athletic life. I should like to see a rule past that no field coach could coach more than one year, and *that* only the first year after graduation, and that no institution could have more than one coach for any one sport. This, however, is outside the province of this paper, tho I believe it does bear upon college morality. Our condition here in Ohio I believe is much better in this respect than in most parts of the country.

Six report that intercollegiate athletics are a good influence and helpful to college morals. It is interesting to note that with five of the six colleges reporting, who belonged to the original Ohio Athletic Conference, four report intercollegiate athletics a good influence, and the others so reporting have since become members of the Ohio Athletic Conference. One reports progress by saying less harmful than when we were not members of the Ohio Athletic Conference. Five say it has no bearing. One says not elevating or refining. One says a help on the whole, with some limitations. Two report temptations to indulgences when out of town. One says it has not developed conscience as it should. Let us remember that it took some time to develop faculty conscience at this point. The development of faculty conscience and the inauguration of faculty control are usually followed by the development of student conscience.

In reply to the next questions, "Are you troubled by lying or cheating among your students? If so, in what way or to what extent?" eight institutions say very little, occasional cases. Two say yes, in recitations and examinations.

One says to some extent. One says not to any alarming extent. One says graft in all student activities where money is involved. Two say some lying in excuses and in shielding one another and some cheating in examinations. And two say "Not at all." In the two latter cases the honor system prevails, and a student council controls.

In reply to the next question, "Do you believe the estimate of college moral conditions made by Mr. Birdseye in his book to be just as applied to your own college?" nine say no emphatically. One says not entirely, and seven do not answer. The replies to the second portion of the question, "If not, in what particular is Mr. Birdseye's estimate misleading?" are as follows:

1. He knows nothing of the Western college in a small community. No such fraternity and immorality problems as he finds.

2. His estimates are much too high on drinking, gambling, etc.

3. Too extreme all along the line.

4. It does not represent the moral status of our student body.

5. The college home is more wholesome than Mr. B—— describes it.

6. He overestimates the number of men given to immorality.

7. Too sweeping in statements.

While the report for the eighth institution says:

8. The writer believes that after Mr. Birdseye's visit to the college reporting, he has an increased regard for conditions in at least certain institutions.

The last question on the list is as follows, "Do you believe the moral life of the college is better or worse than when you were a student?" Thirteen say conditions are better now. Most of them think decidedly so. Two say conditions are such they can not compare, but one of the two says there is great improvement in the past ten years. Two say there is no manifest change.

The testimony given above would seem to be conclusive that

college officials in Ohio generally believe conditions in the colleges of the state to be much better than Mr. Birdseye's general estimate of college conditions. In no single point, in a single institution, are conditions thought to be as bad as he indicates.

This seems to me to prove conclusively one of two things. Either his estimate of student life and habits is not true, as applied to Ohio colleges, or his estimate of the accuracy and thoroness of faculty observation—which he estimates at nil—is true as applied to Ohio faculties. We must, I suppose, allow every man to draw his own conclusions as to which point is proven. I do not myself believe that a man necessarily goes blind because he becomes a member of a college faculty or occupies an administrative position. I should expect these estimates, on the whole, to be somewhere near the truth, realizing perfectly that there are many things which no college officer or faculty member *can* know.

It is a relief to go back to a point in the history of universities, beyond which I feel sure we will all agree we have made moral progress. Two or three quotations from Rashdall's *Rise of medieval universities* will convince us that we have made some progress:

1. Rashdall says: "The violence of medieval university life was almost equaled by its bibulosity. No important events of life could be got thru without drinking! (The students) might spend their evenings in the tavern and drink as much as they pleased. 'Drunkenness is rarely treated as a university offense at all.' At Ingolstadt a student having killed another in a drunken row, the university resolved on the confiscation of his scholastic effects and garments, and therewith contented, did *not* proceed to the punishment of expulsion. It is satisfactory to add that a Prague M.A., believed to have assisted in cutting the throat of a Friar Bishop, was actually expelled" (Vol. II, p. 612).

2. The rules at Leipsic provided a "fine of ten new groschen for the offense of lifting a stone or other missile with a view of throwing it at a master, but not actually throwing it. For throwing and missing the mulct is increased to eight florins, while a still higher penalty is provided for the more successful marksman. A later statute further distinguishes between hitting without wounding and wounding without mutilation for which the penalty arises to eighteen florins, together with compensation for the injured master, while only for actual mutilation is the penalty of expulsion denounced" (Vol. II, p. 615).

Moral conditions in some respects were such that they can not be described here. There were university and college problems evidently before the days of fraternities and intercollegiate athletics. Even tho Mr. Birdseye's gloomiest views are correct, progress has been made. Whether we agree with Mr. Birdseye or not as to the amount of immorality and vice in our college life, we can all agree that he has performed a service in indicating danger points and in arousing college officials to a realizing sense of their responsibilities at these points. I have already transgrest upon your patience and will not attempt to indicate how the moral problems of the college may be best attacked, except to say that, in general, I agree with Mr. Birdseye that it is not to be done by means of college ordinances, but rather by wise faculty, alumni, and student cooperation—the faculty and students working together to correct conditions rather than in an attempt to punish individuals, to create a sentiment that will not tolerate drunkenness, gambling, sexual vice, or cheating in the student body.

This, it seems to me, ought to be possible of accomplishment with a faculty willing to actively cooperate with an intelligent body of American students from which mere idlers and those afflicted with what Professor Shaler calls "miscellaneous worthlessness" are rigorously sifted out,—if the student body can be convinced that the faculty does not stand in a mere disciplinary position and is always attempting, first, to save the individual; second, to protect others, and third, to preserve the honor, the good name, and the efficiency of the college.

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## VII

# THE EVALUATION OF HIGHER EDUCATION BY MEANS OF THE UNIT SYSTEM[1]

In this audience it is not necessary to be reminded that the three most conspicuous and most formative events in recent American educational endeavor of an administrative sort are the Report of the Committee of Ten, appointed by the National Education Association in 1892; the conception and the effective organization of the College Entrance Examination Board, whose first examination was held in 1901; and the establishment of the Carnegie Foundation for the Advancement of Teaching in 1905, whose first report stating its definitions and rules for administering its great trust appeared in 1906. It remains for the uncertain future to determine whether either of the two voluntary, national associations of American universities or any of the college entrance certificating organizations will emerge and complete the quartet of agencies whose influences will be definite in settling old problems and anticipating new ones in our general scheme of education.

The first three events, however, must be mentioned as a preliminary to any appropriate consideration of the present topic. The Committee of Ten made its work famous by allowing its manifest interest in the problems of higher education to settle into an elaborate determination of the details in the curriculum of the secondary school. The high school training was rightly regarded as the inevitable stepping-stone historically and pedagogically to higher education. This committee made no compromise with things as they were. And the uniformity pursued by them has become a definitely meas-

[1] Read before the Association of Colleges and Preparatory Schools of the Middle States and Maryland, Washington, D. C., November 26, 1909.

urable practise for our secondary work. The College Entrance Examination Board came in timely sequence to make permanent the remarkable gains of the Committee of Ten by a definite serviceable organization for a further tabulation of the function of secondary work. It in fact overcame the earlier "educational atomism" and aided colleges in coming to a clearer recognition of their true public service. Without creating admission subjects, but by taking such as existed, it elaborated a scheme of uniformity which nationalizes the attainments of the individual in these subjects, and stamps its marks as the coin current and at par in the entire realm of our higher education. That it acts more immediately as a "machine for registering the results of the examinations" from year to year does not impair its remotest service. The Carnegie Foundation for the Advancement of Teaching, finding so much and also other cooperating labors achieved, made the startling contribution of a solution, designed to enable an intelligent realization of its immediate purposes and to perform a wide service extending into the indefinite future, to the whole nest of problems in higher education in so far as they center about the teacher. The condition for removing and rewarding the venerable teacher at once specified his eligibility in terms of the distant connection he might bear institutionally to the entrance requirements which must be faced and solved by the prospective college freshman. The Committee of Ten worked at the problem of the studies. The College Entrance Examination Board labors annually with the student entering higher education. The Carnegie Foundation for the Advancement of Teaching is immediately aware of the needs of the teacher, but is also so conspicuously conscious of the efficiency of the teaching permitted and permissible institutionally that it successfully measures this in terms of money. The Committee was democratically impotent in the matter of enforcing its recommendations. The Board performs so distinct a service that an acceptance of it can be but a mark of average intelligence. The Foundation preserves its utter freedom by discovering that its power to construct is only enhanced by its financial ability, thus meeting the human element in our

democracy more effectively than if it had all the inquisitorial right of a governmental charter.

It may in fair truth be said that these and other agencies have operated as from the outside, while the high schools, the colleges, and the universities have rather complacently accepted or rejected the findings and recommendations. Nineteen hundred and eight seems to be the year to record the fact that the uplift of higher education is on. The institutions most interested in these movements have at last spoken more or less for themselves. The Association of American Universities had been long content with the simply stated conception that the existence of a creditable school for graduate instruction and investigation really defined the term American university. Early in this year it formally introduced a belated second criterion: namely, the requirement of one or more years of college work for admission to the professional school, the characteristic degree of the latter being conditioned upon the completion of at least five years of study. Late in the same year the National Association of State Universities concluded the series of attempts on the part of these higher institutions to pronounce upon their own work and to set up standards for their own living by giving us a "standard for American universities." Demonstration that this is to be the standard must be awaited. The continuance of the college, splitting its course at the end of the second year, and introducing professional material in the last two years, putting the professional school on top of the first two years, and making more emphatic the requirements for the degrees of Master of Arts and Doctor of Philosophy are among the chief features of this standard which entitles a member of the association and others to recognition. In the meantime the National Conference Committee on Standards of Colleges and Secondary Schools had been active, formally urging "our organizations (represented by its membership) to collect data concerning, and to study the subject of, the standardization of colleges and universities"—a report of which this association received one year ago.

The chief merit of these striding movements, taken as a whole, is to be found in the discovery of, and now widely ac-

cepted conviction as to, the wonderful complexity of education as an affair in human life, both in that of the individual and in that of the nation or society at large. And the good things that must be said over and over again about the present situation in our higher education are not a few. The situation is wholesome. Academic privacy has gone, and education has entered the stage where teaching is admitted to be the essential institutional function. Not only has our democracy, but the institutions themselves have profited from the publicity as to work done by teacher and student, as to finance and as to general policy. The early autonomy of the single institution, so unsuited to a democratic situation, yet a high tribute to the unshaken confidence of the public in higher education, has given way to organization and cooperation. These gains have come thru no coercion except that of an enlightened public opinion among our administrators and our teachers, who have at last agreed to look at actual results instead of claiming the rights of a traditional professional dignity. The slogan of uniformity has brought many to the forefront, and everywhere the standing order of the day is to unitize subjects and students, to uniformize entrance and exit requirements, and to standardize institutions and teachers; all to be rounded out by a "uniform system of retiring allowances." Not infrequently may be seen in some corner of the national educational domain an unholy scramble for "recognition" and acceptance on some sort of a list. And all this, largely if not entirely, because of the innocent definition of the unit by the Carnegie Foundation for the Advancement of Teaching as five weekly recitations in a subject for a year by a high school boy or girl. This standard of measurement for work done was not arbitrary, but was based on careful observation of the best practise. A more recent and perhaps more official definition of the unit is that lately announced by the National Conference Committee of Standards of Colleges and Secondary Schools, which reads, "A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work." [2]

[2] *Science*, October 29, 1909, p. 591.

The words of President Pritchett in the *Second annual report* (1907) *of the Carnegie Foundation for the Advancement of Teaching* (p. 66) come to mind at this point with renewed force. "If this tendency towards uniformity of entrance requirements tends also to carry over into our collegiate administration the less elastic character of the public school system, its wisdom is questionable." How far does meeting uniform requirements become a direct measure of uniform or equal mental development and ability so far as the educational institution must deal with and estimate them? On the administrative side have we not come upon a state of over-organization, incurring the dangers of either administrative waste or too great centralization? Is it not possible now for even a few men to determine the academic activities of multitudes of students and to evaluate the work of their teachers?

That standards of estimating educational results are in daily use is a matter of ordinary practise. That the standards in general use have been individual and not common is a matter of regrettable history. That standards ought to be improved, and if possible raised, is but an expression of the human hope of being better and doing better. That the newly adopted standards are but rapid elaborations of the unit in its various mathematical aspects as applied to the chief relations in educational organization is the most striking thing in American education today. This national success in marking quantities has even led to the experiment of mathematically measuring the quality of collegiate work in what is known as the credit-for-quality plan. But, raising standards *can* mean either of two things—either more work, or better work. It is hardly a matter for debate that mere increase of work is not an immediate guarantee of better work, and that a qualitative improvement of work done includes inevitably a greater quantity of work. Each one of us is too familiar with the admonition that if one wants to do better work, undertake less, or, if more work has to be done, don't skim over it. We should be doing violence to these tendencies which are seeking definiteness in higher education if we failed to keep constantly in mind the fact that even the Carnegie Foundation for the Ad-

vancement of Teaching has squarely endeavored to recognize quality in its application of the unit system as found in its remarkably successful definition of the American college. This stipulates not merely the four years' preparation, the four years' course of study, and the six professors, but also sufficiency of teachers and means to guarantee the quality of the instruction.

The wide-spread recognition and ready adoption of the unit system can not be said to be due to the mere material instinct of seeking benefit from the lately established private foundation. They express rather, it seems to me, a fundamental necessity in all education. The educational process is not timeless. And the unit system has told us emphatically that teaching requires constantly and everywhere time—time—time! Hours, weeks, and years are enumerators rather than denominators. Culture can not escape this enumeration, provided culture is the prime collegiate aim. Technical and professional training and research demand time in their own right as well as presuppose the results of work done in the preceding inevitable periods of time.

It must be said also and immediately that education is almost anything but a mathematical process. We probably have no single generalization in educational theory as yet which can be intelligently reduced to a mathematical formula. The formation and the increase of habits and the training and widening of judgments depend upon the number of reactions that may be aroused and the amounts of information that may be brought to the individual. Education does, to be sure, involve the maximum of right answers and a minimum of wrong answers. A young man possessing an international reputation in one of the newer sciences recently exhibited distinct confusion as to the significance of Harper's Ferry, and open ignorance as to the method of creating the members of the United States Senate. A young woman, a college graduate, and now in a medical school requiring graduation from a college for admission, professed complete ignorance of the very name of Harper's Ferry. And yet, we would be unwilling to withhold the term "educated" from a description

of these individuals. It is not unfair to add that these instances represent an academic epoch antedating the current adoption of the unit system.

Higher education, if it means anything, means nothing less than subjects of study, students and their methods, and lastly teachers and their methods. And the factor of prime consideration is he for whom the whole establishment of education in its more immediate aspect exists—the individual student. No one can successfully blind himself to the existence of these three factors. The unit system, in its widest reaches, it seems to me, tends to sacrifice the individual, the very object which every scheme of education can the least afford to neglect.

The possibility of uniformizing subjects of study and of equating professors has been clearly shown. But, after all, can we unitize the individual student? We may define requirements and passes in terms of masses of subjects and topics and of the length of time devoted to each; but, can we actually go farther and continue the application of our mathematical precision? And, if we do go farther, what is the gain to our system and the developing individual whom it is designed to serve? This really human element in higher education is too easily lost sight of in the mechanism of administration which system speedily begets. We have labored so consciously at an improvement of this machinery that it is now in such smooth running order as not to feel or record the slight jolts occasioned by the crushing of individuals. Have we not succeeded in erecting individual freedom into a very Moloch when we scheme a set of administrative rules that are supposed to work "automatically" so that the individual student responsibly seals his own fate? In a democracy our educational problem strangely seems to be to get the student into school and college and university rather than out of them. I leave it to you to say whether this state of affairs is more of a reproach than a credit to our scheme of things. Is it possible to establish a clearer consciousness of this human element? This seems to be a pressing demand, more in the college, less in the university. In the training for research, it is particularly the individual who is constantly in the fore-

ground. But not so in the college. The new experiment of a consolidation of all admission interests, just inaugurated at Columbia University, looks forward to the more adequate restoration of this human element in the process of "passing up" into higher education.[3] It is a plan which credits performance by the individual in his secondary work, and happily ventures to be a contribution towards the solution of the difficulties inherent in the exclusive examination plan without undue violence to the institutional significance of the secondary school.

Higher education in America possesses certain features which should not be overlookt when attempting to estimate current tendencies. The historic development of our college has incorporated into its character those elements which notably render the institution susceptible to influences from without. It has always been a means to an end. It has always existed as a definite response to a definite social need. And the college of today, except it be an abstraction or an unfit, can not escape this apparent limitation to its function. The educational efficiency of the better of the older colleges was probably not dependent upon the course of study nor upon the particular studies. The older college reached the individual student and expended its entire pedagogical energy upon him and his training. Character, as a lasting life ideal, and scholarship, as a daily if not hourly practise under the influence of the presence of the old-time teacher, were made into realities in the experiences of the individual student as such. If the unit system proposes itself as a remedy for the existing evils so widely declaimed against, one may well doubt the extent to which it will be successful, especially if it contents itself with hoping to find permanent educational guarantees for the academic improvement of the individual in purely external features of the institution. The rapid decrease in the number of high school students who go on into higher education as compared with the unprecedented increase in the number of high school attendants seems to indicate that

[3] Nicholas Murray Butler: "A new method of admission to college," EDUCATIONAL REVIEW, Vol. XXXVIII, September, 1909, p. 160 ff.

the demands of the industrial and vocational life of the individual have become an active competitor against higher education.

There are some at the present time who are suspecting that the elective system of studies has somehow gone too far, and is unnecessarily complicating the problems of higher education. It came in large measure to meet the very demands of the individual in his variation of interests and abilities. But when the system reached the point of its fullest swing it began to show the tendency of disintegrating the higher education which it sought to construct. It is, indeed, no small thing when a new method of inquiry and the new knowledge it brings forth come to receive the fullest academic recognition. But when we have every kind of knowledge quantified we have the elective system, a system which is not totally unrelated in its fundamental character to the unit system. It may be, however, that the latter has within it the potencies which shall appear as the corrective of those limitations which have been glaring in the former.

A point of utmost delicacy is reached when we raise the question, What is an American university? Who shall answer it? Some foreigners have certainly not hesitated to give their answers. Some exceptional establishments among ourselves have been exemplary in framing a more steady and elaborate response. The current system of measuring education by units has gone so far as to render it needful that the universities, by both common and organized consent, shall outline a possible answer, particularly as to what a university ought to be. These efforts mark the attainment of a totally novel stage in American education.

The line of cleavage between the undergraduate and the graduate has been clearly enough marked. The motive, the preparation, the attitude, and the results characteristic of the one are radically different from those of the other. And yet, it is the continuous development of the same individual which the university seeks to foster in sequence to the formative work of the college. When the application of the unit system reaches up so far as to say that the university must " squarely

rest upon the college," we have something definite and helpful, and in accord with our best practise. The very term "graduate" or "post-graduate" study has been made useful and exact in describing the work of the student in the university. As an indorsement of training by research and for research, the unit system has been sane and genuine. If, however, the mathematical unit should attempt to go further and uniformize this training by specific schedules, then it exceeds its proper sphere. Here is where the individual, both as teacher and as taught, must be safeguarded against the intrusion of too much administrative machinery. Here is where the measurable quantity must give place to quality, and no system shall creep in to impede the progress of constructive work.

A far more complicated situation in the work of the university is found in the sphere of professional training. The tendency of the secondary school and the professional and the technical schools to come more closely together, threatens to crowd out the college, and to that extent seriously impair the work of the university. But the tendency to telescope the academic and the professional interests, and to trade off even in the matter of credits, marks a more serious danger in higher education. Here the unit system may become a great defense, or it may be a means of destruction. Every one must recognize the urgent necessity of shortening the total time of schooling for the individual. But, if the mathematical unit operates in such a way as to enrich the youth in order to rob him later, we count it worse than a chance misfortune. A fair beginning in higher education in America has been made, and we should not tolerate any tendency, if known at the start, which would check its further development.

The final point to which I wish to call your attention is the point of view from which higher education can be properly understood and estimated. It is that of the individual and his relation to the national character to which he belongs, by which he is fashioned, and back to which he makes such contribution as the issues of his achievements may determine. This is a true relation, whether the education be here and now, or there and then. But it is not essential that the indi-

vidual be clearly conscious of his participation in the national unity of which he is an organic part. Nor, even, is it essential that he who teaches shall aways be aware of the fusion that is taking place nationally in the organizing experiences of the individual. The problem that we face is this: Can education ever become more than an institution which merely perpetuates nationality when this is once determined; or, can it become constructive in nationality?

Our own democracy has been unhesitatingly linking itself to the school. When anything has been wrong in the state we have gone straight to the schoolmaster, and there either laid the blame or left corrective directions. As zealots for individual freedom, we have uncritically expounded the dogma of mere schooling. But when a criterion of national import springs up in our midst we find a babel of tongues and a mighty running back and forth to put in stays and braces that the ancient structure may remain intact. We marvel not that their classics made the Chinese. We are amazed when we see a new and modern Germany standing forth as an educational tribute to the molding power of chemistry. Shall our much debating and trying lead us to find the secret by which, after the fashion of sound education, we shall come to control our own nationality even in the making?

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# VIII

## CURRENT EDUCATIONAL PUBLICATIONS[1]

**Bascone, Francesco.** Le conseguenze della nuova legge sul monte pensioni dei maestri elementari. Milano, Cooperativa editrice libraria, 1909. 48p. 12°.

**Brown, Elmer Ellsworth.** Government by influence and other addresses. New York, London [etc.] Longmans, Green, and co., 1910. 245p. 8°.

The volume contains the following addresses delivered on various occasions during the author's first three years as Commissioner of education: Government by influence.—Self-respect of cities.—Development of agricultural education.—Some relations of religious education and secular education.—Culture of righteousness.—Public schools in the movement for international arbitration.—Possible co-operation between the educational associations of different countries.—Are we an inventive people in the field of education?—Children in the United States: some of their needs.—Training for mother-work.—Work of women's organizations in education.—Distinctive functions of university and normal school in the preparation of teachers.—Industrial education as a national interest.—Art of the teacher.

**Chantavoine, Henri.** L'éducation joyeuse; en vacances—en famille. Paris, Hachette et cie., 1910. 197p. 12°.

Deals with the education of children in vacation time, and with the relations between parent and child in the family under present social conditions.

**Crane, Richard T.** The utility of all kinds of higher schooling. Chicago [H. O. Shepard company] 1909. 331p. 8°.

"The book contains much that seems overdrawn and prejudiced, but a reading of the more than three hundred pages reveals many truths—truths which prominent educators acknowledge and often discuss. . . . It condemns education, and it praises education; it is for the practical, and it is against the theoretical."—American educational review, March, p. 324, 327.

**Crowley, Ralph H.** The hygiene of school life. London, Methuen & co. [1910] 403p. 12°.

Discusses the means by which the physical and mental health of school children can, in existing circumstances, be best promoted, with special reference to the problems of the English school medical service.

**Davies, Maud F.** School care committees; a guide to their work. London, T. Burleigh, 1909. 94p. 16°.

**Eulenburg, Franz.** Die entwicklung der Universität Leipzig in den letzten hundert jahren; statistische untersuchungen . . . mit 2 farbentafeln und 9 graphischen darstellungen. Gedruckt mit unterstützung der Mendestiftung bei der Königlich sächsischen gesellschaft der wissenschaften. Leipzig, S. Hirzel, 1909. 216p. 4°.

[1] Compiled by John D. Wolcott, Acting Librarian of the United States Bureau of Education, to which books and pamphlets should be sent for inclusion in this record.

**Gayley, Charles Mills.** Idols of education. New York, Doubleday, Page & company, 1910. 181p. 12°.

In this essay, the author frankly and cleverly presents what he regards as some of the vagaries of our educational system at the present time, and some of the reasons for their existence, for he is sure that in the recognition of the cause is to be found the means of cure. He urges to vocationalize the liberal studies so that they may prepare one for an occupation in life, also to liberalize the vocational that they may prepare one for the conduct of life.

**Gesellschaft für deutsche erziehungs- und schulgeschichte.** Historisch-pädagogischer literatur-bericht über das jahr 1908. Berlin, Weidmannsche buchhandlung, 1910. 278p. 8°. (19. Beiheft zu den Mitteilungen)

**Gray, John C.** Number by development; a method of number instruction—primary. Philadelphia and London, J. B. Lippincott company [1910] 244p. 12°.

"An exceedingly interesting number book for school use [containing] a great deal that is virtually new."—Journal of education, March 31, p. 356.

**Gurlitt, Ludwig.** Erziehungslehre. Berlin, Wiegandt & Grieben (G. K. Sarasin) [1909] 353p. 12°.

The author here presents an original theory of a popular education which naturally develops patriotism and a higher general standard of culture, while training to will and action.

**Hogarth, A. H.** Medical inspection of schools. London, H. Frowde, Oxford university press [etc.] 1909. 360p. 12°. (Oxford medical publications)

**Keatinge, Maurice W.** Studies in the teaching of history. London, A. and C. Black, 1910. 232p. 8°.

Aims at bringing into strong relief a few fundamental positions concerned with the teaching of history to boys and girls in the middle forms of secondary schools.

**Kerr, John.** Scottish education; school and university, from early times [12th century] to 1908. Cambridge, University press, 1910. 442p. 8°.

The author has undertaken to select from all available sources such details as are typical of the time and locality to which they belong, and present them—to use the language of art—in an impressionist or bird's-eye view.

**Kerschensteiner, Georg.** Grundfragen der schulorganisation; eine sammlung von reden, aufsätzen und organisations-beispielen. 2., verb. und verm. aufl. Leipzig und Berlin, B. G. Teubner, 1910. 296p. 8°.

**Key, Ellen.** The education of the child. New York and London, G. P. Putnam's sons, 1910. 85p. 12°.

Reprinted from the authorized American edition of the Century of the child. Edward Bok, editor of the Ladies' home journal, writes of the chapter: "Nothing finer on the wise education of the child has ever been brought into print."

**Leclère, Albert.** L'éducation morale rationnelle; ouvrage précédé d'une préface de Luigi Luzzatti. Paris, Hachette et cie., 1909. xii, 292p. 12°.

**Leipzig. Universität. Press-ausschuss der Jubiläumskommission.** Die Universität Leipzig 1409-1909; gedenkblätter zum 30. Juli, 1909. [Leipzig, Quelle & Meyer, 1909] 86p. 8°.

**Lewis, G. G.** Typical school journeys; a series of open-air geography and nature studies. London [etc.] Sir I. Pitman & sons, ltd. [1909] 140p. 12°.

**Music teachers' national association.** Studies in musical education, history and æsthetics, fourth series. Papers and proceedings of the Music teachers' national association at its thirty-first annual meeting, Northwestern university, Evanston, Ill., December 28-30, 1909. [Hartford, Conn.] Pub. by the Association, 1910. 252p. 8°.

Contains much suggestive and instructive material, among which may be mentioned the reports of the college conference and of the public schools conference, Aesthetic studies in the college (L. B. McWhood), and the Possibilities of opera in America (Karleton Hackett).

Pour la vie familiale; conférences faites à l'École des mères. Toulouse, E. Privat; Paris, H. Didier, 1909. 302p. 12°. (Bibliothèque des parents et des maitres, 4)

CONTENTS:—A. Moll-Weiss, Introduction: L'École des mères.—E. Boutroux. L'entr'aide familiale.—E. Cheysson, Association, état, famille.—G. Compayré, Ce qui différencie l'éducation des filles de celle des garçons.—Darlu, L'amour maternel dans l'éducation.—A. Lichtenberger, Notes sur les enfants.—P. Malapert, Les sentiments chez l'enfant.—A. Moll-Weiss, L'assistance-éducative. L'éducation ménagère et familiale doit-elle être réservée au sexe féminin?—F. Passy, Ce que les femmes doivent savoir, La responsabilité morale.—Charles Wagner, La poésie des devoirs modestes.

**Showerman, Grant.** With the professor. New York, H. Holt and company, 1910. 360p. 12°.

"Twelve sprightly chapters dealing with various aspects of college life and of education in general. . . . But there's many a serious word said in all this jest; and it is so well said, with so apt and evidently unstudied employment of classic quotation and neat literary allusion, that the lesson of the book, so far as it has a lesson, is learned without sense of effort or anything but entertainment on the reader's part."—The Dial, April 1, p. 247.

**Van Dyke, Henry.** The spirit of America. New York, The Macmillan company, 1910. xv, 276p. 8°.

CONTENTS:—Introduction.—The soul of a people.—Self-reliance and the republic.—Fair play and democracy.—Will-power, work, and wealth.—Common order and social co-operation.—Personal development and education.—Self-expression and literature. "This book contains the first seven of a series of twenty-six conférences, given in the winter of 1908-1909, on the Hyde foundation, at the University of Paris, and repeated in part at other universities of France."

**Verein für wissenschaftliche pädagogik.** Jahrbuch, hrsg. von W. Rein. 42. jahrgang. Dresden-Blasewitz, Bleyl & Kaemmerer, 1910. 297p. 8°.

CONTENTS:—E. Weber, Grundwissenschaften der pädagogik.—E. Bolis, Lateinische syntax im anschluss an die lektüre.—H. Ruppert, Grösse und zahl.—H. Schmidkunz, Gegenwärtige stand der hochschulpädagogik.—P. Zillig, Zur frage: Darf der altruismus zur grundlegung des bildungsideals und damit des lehrplans für die volksschule gewonnen werden?—Dr. Felsch, Meumann und Herbarts psychologie.—K. Just, Charakteristik des kindesalters.—P. Dietering, Herbart und die modernen.—F. Falbrecht, Bemerkungen zu Gizewskis abhandlung.

**Welton, J.** *and* **Blandford, F. G.** Principles and methods of moral training with special reference to school discipline. London, W. B. Clive, University tutorial press, 1909. 262p. 12°.

An examination into first principles, that by the application of them to current practise the disciplinary influence of schools may be made effective and productive of earnest-minded, upright and honorable citizens.

# IX

# DISCUSSION

## THIS UNWHIPPED GENERATION

"Now what will your mother say?"

"Aw, she won't say nothin'."

"But you don't dare to go home like that?"

"Sure I do. I don't ever get licked."

The ten-year-old was passing thru my garden in his "stocking feet." As it was early in April, he had a veritable geological exhibit of soils on his soles and ankles. My questions were asked while I was wondering what my mother, under such circumstances, would have done to me. But it was too terrible to contemplate even in retrospect.

This same urchin is the terror of his teacher. Why? Because he has no fear of correction. Why should he have? He has never been corrected. He is of the unwhipped generation in whom "selfhood," and not respect; "individuality," and not obedience; "free expression," and not honor, is developed thru "love." This pseudo-psychology is well represented by one of its professors who calmly remarked to a guest, looking to him to correct the professor's bad boy for throwing a wad of potato on the guest's shirt front, "Sh, I'm studying him." Now we teachers are becoming suspicious of the boy whose parents are "studying" him. They say:

"John is a good boy, but he has to be taken just right. He's so good-hearted that he is easily led. And he's so sensitive that we can't correct him."

For in nine cases out of ten that's just the trouble—he has not been taken just right, which is by the application of a shingle to a certain tender part often enough to convince him that there is a force that maketh for righteousness. We find that this well-meaning youth is without the first notion of

order. That were not so bad, but upon our attempting to correct him he is really offended, tells us that we are without rights in the matter and that he shall appeal to Cæsar, or something to the same end. To do instantly what he is told to do seems a cruelty. He wants to argue with us as he is wont to do with his parents. Recently I said to a boy:

"I shall want you to see me before you leave today."

"I can't; I must go home," he promptly replied.

"You must," I said.

"I won't, then," was the answer.

He was just entering high school. I was almost a complete stranger to him so that he could not have pleaded former injustice. It was, indeed, almost the first request that I had made of him. He refused simply because it meant some trouble to obey, and he had not been trained at home to do what is unpleasant. Shortly afterwards he accompanied an athletic team on a trip, and gave his mother great anxiety by staying away for two days. I asked him what she had said when he had finally arrived home, and he replied, smilingly, "Oh, she had her say out, and I had mine, and that's all there was to it."

What about this girl who stayed out of her classes in order to attend a dance in another town? Her mother was asked about the matter, because the girl was seriously behind in her work. Said that good woman:

"Well, I told Myrtle that she ought not to go, but she would do it. What can I do?"

Myrtle was fifteen years old. She was being "studied," while her character was wasting away with the disease of disobedience.

These cases are not particular or odd, but are typical of the unwhipped generation. This course of training begins in the cradle. Candy is not good for the baby, but if he cries let him have candy. Jam is bad for Johnny, and breaking into the pantry is worse, but if Johnny wants jam, he must need it, and as for the burglary, it proves his "personality." Don't spank him, because you will kill his will and then he will not "express" himself. What about the wills of those stern

Puritans who, as children, were brought face to face with the rod every day? They grew up with a sense of honor at which the world will never cease wondering, with the finest regard for others' rights, with Truth their hand-maiden and Scholarship their guide. Has not the reaction against their too great severity gone too far? Yea, verily, for we have not the Cavalier to fall back upon.

Rights of others! Could we plant fruit trees along our highways, as they do in Germany, and expect them to pay for the cost of maintaining the roads? The other day I overheard a high school boy say:

"Us fellows put up dandy goal posts with some two-by-fours we found in a pile of lumber by a new house."

"Did you pay for them?"

"I should say not. We took good care not to let any one see us take them."

His father is vice-president of a bank. Perhaps that explains. At any rate, the incident may help to explain the increase of children's crimes.

Do these young gentlemen confess their faults, do they save their innocent comrades by speaking the truth, as the Sunday-school papers lead us to believe? I wot not; they lie as glibly as possible. One teacher lately determined to put his room of fifteen-year-olds on honor. He returned after a ten-minute absence to find evidences of a fray. With the strongest faith in his pupils he asked that all the guilty remain with him at the close of the session. The innocent were to come and tell him that they had had nothing to do with the disturbance. Only two remained. Too many of the rest laughingly swore away their honor. What can we make of this?

Of course, the two could not give testimony. That, by a strange reasoning, would have been dishonorable. In fact, the average boy would rather have the building burn than "snitch" on a comrade. This trait has been overpraised. While it is true that we do not want to encourage tale-bearing, certainly no training is adequate which does not fit the young to be the best citizens. And the best citizen is he who is ready to testify against the evil-doer. Can we wonder that men have

suffered San Francisco and other cities to be robbed by grafters rather than fulfil this duty? They had false honor drilled into them on the playground.

It is this feeling of levity that brings into disrepute among girls and boys alike the desire of any one for good records. A lad, bright and vigorous, suddenly fell off in his grades to a striking extent. Much puzzled, his teacher asked his mother about the matter. She replied:

"The reason is simple. Donald was pestered nearly to death by the boys until I said: 'Donald, don't you bring home an "excellent" card again. I'm not going to have you badgered. You do as the rest.'"

What is it that the rest do? They are not taught at home to sacrifice their pleasure. So, unable to battle with the difficult, they rush into school ready to do anything easy. Fond mothers, who take magazines, fear lest their treasures become tarnished by too much wear. One of these lately told a grade teacher that she thought children were rushed too much. So she was complacently letting her boy make a habit of taking his work over again. The plain truth was that her boy was lazy and would not do the required tasks. He will come into high school some day ready for nothing but a good time, elect an easy course, and fail in that as often as he can. Worst of all, he will not be any more ashamed than was his mother at first. In fact, a boy lately told me with some pride that he was taking algebra for the fourth time. In one room we registered forty per cent. who were two years behind their schedule. It is not the age that is discouraging; it is the failures which it represents—failures caused chiefly by simple non-attention.

"I'm not normal," said a sixteen-year-old boy to me recently. "I like to work."

He put it so simply and honestly that I could not help being aroused. So far from being that freak, the "sissy boy," he is strong, manly, full of healthy mischief, and possest of a good sense of humor. That humor keeps him from bemoaning his abnormality. Now, when one considers, he must see that the modern house is largely responsible for this modern

"normal" boy who does not like to work. In the days of wood fires and errands, the system of the boy was kept in tone by healthy labor, which held him rather close to the house. Today he is either a young gentleman of leisure or finds employment on the street. He is not held accountable to order, so he is much given to loafing and theater-going. Putting his head in at the door, he shouts out to his mother that he shall not be home to dinner, or to sleep, as the case may be. If he lives in a village, he spends his evenings, as regularly as a business man, "downtown." Just a month ago our hostess at a dinner, during which we had hoped to become better acquainted with her young son, apologized to us for giving him his meal first, as he had "an important engagement." This, we learned afterwards, was merely to meet a crowd on the corner—a crowd that had no other aim but to be on the corner. A boy who respects his home and his mother so little can not be expected to show much courtesy toward his school or his teachers.

Given, then, a child without the conception of obedience, without respect to elders, without a true sense of honor, a child ready to trample on the rights of others, ready to steal and to lie, if circumstances demand it, a child to whom work is a bore and scholarship a shame—what are we going to do about it? The case sounds pessimistic—as though we were not up to our fathers. But the young teacher can not afford to be pessimistic if there is a chance to be hopeful. Thinking so, we easily recall the sturdy independence, the striking versatility, the piquant originality, the democratic benevolence, and the deep repentance that these same children constantly reveal when they are fully aroused to a sense of wrong-doing. We admire the whacking energy with which they play football or the game of business. Nor can we be blind to the success that comes to many a careless student after he has sloughed off all pretense of studying. All of these considerations make us believe so firmly in the American boy and girl that we think them worth disciplining. The home has, temporarily we hope, ceased to fulfil this function. Aye, it has even forbidden the school to rule except by "love," or by a soft punishment which

is a joke instead of a terror. Except as we train these boys and girls to become the right sort of parents, we can have no influence on American parents. Mothers' clubs and teachers' and parents' associations are wholly inadequate. I maintain, then, that the school as an institution ought to step into the breach armed with its old weapon, the birch rod, and win the glory which it used to have.

How can it be done, since parents make the school? In the first place, many cities allow the pupil to be whipt, with the consent of the parents. This privilege ought to be used to a greater extent. Secondly, as the worst children often come from the homes where the idea of whipping is so repugnant that the parents' consent can not be gained, the school should fight for its old-time right to punish regardless of the home. There are many men who secretly would like to see this power given back to the school, and many more who could be easily convinced by a few facts. Of course, no one would desire the ancient *fury* of punishment, but by some system, the details of which any wise body can devise, something of the old-time terror of punishment ought to be reestablished so that the small children may be led to believe it dangerous to commit various petty misdemeanors. Then they will come into the high school trained, as they are not now, to respect law and order, to assume responsibility, to be real gentlemen and gentlewomen. If this comes to pass, the next generation, fathered and mothered by these disciplined boys and girls, will rise up and call their parents blessed, instead of what they too often *do* call them.

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# X

## REVIEWS

**Genetic psychology**—By EDWIN A. KIRKPATRICK, B.S., M.Ph. New York: The Macmillan Co., 1909. xv+373 p. $1.25.

The point of view voiced by this book is suggested in the preface, but it is emphasized and elaborated in the introductory chapter. The author says, "All psychology must be founded on genetic principles and become genetic in character," for the theory of evolution is now revolutionizing psychology as it has all the other biological sciences. "The genetic psychologist, therefore, in order to accomplish his purpose of throwing light on the genesis of mental states, must take the point of view of the objective sciences, and must determine the facts regarding activity, behavior, functioning, whether conscious or unconscious, before attempting to describe the development of conscious states. There must first be the science of the genesis of behavior before a true science of the genesis of mind and of conscious states can exist."

Chapters II to VI, inclusive, describe behavior—largely in objective terms; behavior, simple and complex, that of the species and the temporary modes of activity produced by the particular experiences of the individual. First, each type of behavior is discust from the standpoint of the structures necessary, and then, the resulting activities are examined. In the types of animal behavior discust, the author begins with a description of the responses of the ameba and works up the scale, ending with the monkeys. He finds that "there is no essential difference, except in degree and complexity, in the fundamental characteristics of behavior in all animals from the lowest of the protozoa to the highest vertebrate, man." The great number of instincts possest by man, together with their general character, are responsible for the growth of human imitation and the development of free ideas. The changes

in physiological structure are also followed, from the simple organs by means of which the lowest animals maintain life and react to their surroundings, thru beginnings of a specialized nervous system to the highly organized nervous structures which are necessary to the complex behavior of man.

Chapters VII and VIII describe consciousness—first, a general discussion of the objective indications and the subjective criteria of consciousness; and second, a comparison of man and animals as to specific conscious states. From the objective point of view, "the finer, more varied, and advantageous the discrimination, the more accurate, varied, complex, and useful the movements; the more behavior is suited to securing many and distant ends, and the more all these have been the result of modifications produced in the life of the individual by his own experience, the better the ground for affirming conscious intelligence of a high degree." From the subjective analysis, the function of consciousness is, first, to emphasize the result of an action with reference to the end to be obtained; second, to select and focalize one result with reference to one end rather than to any other; third, to unify and coordinate in relation to an end, the result being subjective continuity of experience. The differences existing between man and animals in emotional and volitional states, as well as in the various intellectual states, are taken up in detail.

Chapters IX and X treat of intelligence and the learning process. Intelligence is defined as including all activities that tend to the preservation of organic unity, whether conscious or unconscious, and with this meaning four types of intelligence are developed—physiological, sensory motor, representative, and conceptual. Physiological intelligence is possest by all animals, but the increase in complexity is so great that the author believes there has been almost as much increase in physiological intelligence from the lowest animals to man as there has been in the higher forms of conscious intelligence. Sensory motor intelligence may or may not be accompanied by consciousness, and in this type of intelligence "man is not inferior to the most gifted animals." Representative intelli-

gence enables an organism to learn from the experiences of others and to prepare for future events—only the highest animals show any trace of this type. Conceptual intelligence includes all the so-called thinking processes and is peculiarly human. In the development of the learning process these four types of intelligence are successively active as the learner gains in breadth and proficiency. "Practically everything that is learned consists, if we analyze it, of many simpler processes and usually of series not only of different sense elements, but of series of activities at several different levels. It is only when these series are properly linked together and adjusted to each other that success is possible. . . . As new skill and knowledge are acquired, one series, then another, leads or is used as a standard of reference. Sensory motor standards are common in the earlier stages, while later representative and conceptual standards are most used."

The final chapter contains a summary of present-day theories and principles of racial and individual development.

Altho the book is one that is very suggestive, the writer has found it difficult to review, as it seems to lack organic unity. One feels as tho it contained parts of several books. The method of treatment, also, has necessitated considerable repetition, which is wearisome to the reader. However, genetic psychologies are few, and this one will be very welcome as a reference book for normal school and college students. The policy thruout the book is to compare animal mind and adult human mind, and even in the chapter on learning this is still the point of emphasis. The discussion of changes which take place in a growing, developing human being is left for a later volume. Consequently, this volume offers valuable material to students of comparative psychology, but comparatively little to those interested in children. Nevertheless, the two best chapters in the book, and two that will be found very suggestive, are those intended for teachers, namely, Chapters IX and X. The book is well worth a place in one's library.

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**How to study and teaching how to study**—By F. M. McMurry, Professor of Elementary Education, Teachers College, Columbia University. Boston: Houghton Mifflin Company, 1909. 312 p. $1.25 net.

Not new books, but new ideas contribute most to educational progress. Point of view is more important than technique in procedure. In recent years a great deal has been written on "method" in teaching. Professor McMurry has struck a deeper note in discussing the problem of *How to study*. In this book the problem of method of teaching is treated vigorously, but yet as only incidental to one much more fundamental. This book presents a comparatively new idea, as practically no other contributions have been made to the literature on this subject. As an incidental work on method of teaching, emphasis is given to the viewpoint of the pupil in his efforts rather than to the technique of procedure on the part of the teacher. This is an important reversal of usual emphasis. The book is a simple, natural expression of a teacher who has been led to feel the need of such a study.

The main portion of the work is a discussion of eight factors in study:

1. Provision for specific purposes. The pupil's motive for mental or physical effort is found in his consciousness of a definite problem. 2. The supplementing of thought. Real study must allow experience to "read between the lines" for interpretation. 3. The organization of ideas. Selection and arrangement of material depends not upon the text, but upon the purpose in the study. Thoroness calls for a differentiation between values, not for mere abundance of details. 4. Judging of worth of statements. To accept or reject requires an estimate of value. 5. Memorizing. This "becomes a by-product of thinking instead of a substitute for it." 6. The using of ideas. This is not narrow utilitarianism, but "the main use of knowledge is found in conversation." 7. Flexibility of knowledge. A tentative attitude prompts to further study. 8. Individuality. Self-confidence provides initiative.

In discussing each of these factors the author shows (1) its importance, (2) the ability of the pupils to use that factor, and then (3) suggests means of helping pupils to use that factor in study.

This book is in danger of being adversely criticized for its unscientific basis, and for its non-technical character. But Professor McMurry wrote this as a personal letter to the rank and file of public school teachers to meet their immediate needs. However, the reader would prefer that the frequent argument by analogy be omitted and that the discussion be more concise. The book would probably be more effective with the elementary school teacher were these eight factors in study more fully illustrated by typical lessons.

In addition to the discussion of *How to study,* and the incidental contribution of a new basis of method of teaching, the work is a decidedly strong argument for more efficiency in our schools. To carry out even a portion of these factors of study calls for a marked improvement in the content of our curriculum, substituting the concrete for stereotyped forms. Further, there is an emphasis on the development of habits of industry in work rather than on the acquirement of products of study. Finally, there is a constantly implied appeal to conform school life to community life.

The book should be read and studied by all teachers in public school work.

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*The religion of the Chinese* by Professor DeGroot of Leiden is the work of one of the leading scinologists of the world. One can find better here than anywhere else a scholarly and well proportioned setting out of the beliefs of the people whose empire is China. (New York: The Macmillan Co., 1910. 230 p. $1.25 net.)

Dr. Rudolph R. Reeder is bringing to the problem of the education of the dependent a most unusual equipment and training. His new book, *How two hundred children live and learn,* is a simple and a straight-forward setting out of its methods and results. It is a sort of concrete and definite study of an educational problem which is more of value than most books on educational theory. (New York: Charities Publication Committee, 1910. 252 p. $1.25.)

It is not generally known that Sir Charles Lyell, the great geologist, visited this country nearly seventy years ago, and traveled widely. It is a happy thought that has led the publishers to reproduce in an appropriate volume Lyell's *Travels in North America.* They show the impression which America in the making made upon a trained scientific observer. (New York: Charles E. Merrill Co., 1909. 172 p. 30c.)

We do not quite understand the value of a book like *Questions in school hygiene* by Professor Whipple of Cornell. Surely not a few of the questions can be answered in many different ways, and some of them can hardly be answered at all. A hundred selected answers to question 457, for instance, would certainly be interesting, and a certain type of old lady would regard question 201 as a reflection on one of her luxuries. Any one who could answer all of these nearly eight hundred questions satisfactorily and correctly ought to be in a museum, not a schoolhouse. (Syracuse: C. W. Bardeen, 1910. 88 p. 60c.)

*Readings of American federal government* is the title of a new and highly important book for students of politics by Professor Paul S. Reinsch of the University of Wisconsin. This is substantially a book for the study of politics constructed on the case method. The selections are capitally made and the topics touched upon are of large and immediate interest. It is a source book of high value. (Boston: Ginn & Co., 1910. 850 p. $2.75.)

The last publication to reach us bearing the imprint of the Open Court is a delightfully made volume on *The mutation theory,* Vol. I., by Professor Hugo DeVries. This translation from the German is well made and the American student will now have at his disposal an authoritative setting forth of the evidence on which Professor DeVries's well known logical conclusions rest. (Chicago: Open Court Publishing Company, 1910. 582 p. $4.00.)

A pretty poor book of quotations, badly made, is the *Handy book of quotations,* which appears without authoritative authorship. (Boston: Educational Publishing Company, 1909. 160 p.)

## XI

## NOTES AND NEWS

**Reelection of Secretary Shepard**

At a meeting of the Board of Trustees of the National Education Association held in Chicago on April 13, Dr. Irwin Shepard, who has been secretary of the National Education Association since 1893 and a permanent paid officer since 1898, was unanimously reelected to succeed himself for a term of four years beginning on August 1 next. By the terms of the resolution of reappointment, Dr. Shepard was given authority to propose, subject to the approval of the trustees, an assistant secretary to share with him the increasingly arduous labors of his office. This action will certainly meet with warm and cordial approval thruout the United States.

The National Education Association, as it now exists, is in no small part the creation of Dr. Shepard's administrative knowledge, skill, and tact. He has devoted himself to its interests for nearly twenty years with unflagging industry and with extraordinary success. Perhaps no man in the United States, not himself by profession a railroad man, knows as well as does Dr. Shepard the intricacies of the passenger business of the American railways. In negotiating with the representatives of the railways, Dr. Shepard is always at ease because he has in full command all the facts necessary to an understanding of the situation. He has long ago made for himself a secure place in the hearts of the teachers of the country who have associated themselves with the National Education Association, and he is held in the highest possible regard by the distinguished men who have in succession held the office of president, and who have come to know his work intimately and at first hand. Dr. Shepard was never more useful and efficient than now, and his reelection is nothing more than the confirmation of the confidently expected.

**Commissioner Draper**

Six years ago, after a bitter and acrimonious discussion, the Legislature of the State of New York past the so-called Educational Unification Bill. By the terms of this measure, the two separate educational authorities previously existing were consolidated and united in a single department of education. Its chief legislative body became the historical Board of Regents, which had been in existence for more than a century. Its chief executive officer became the Commissioner of Education, who succeeded to the powers and duties of the State Superintendent of Public Instruction as well as to those of the Secretary of the Board of Regents. The first Commissioner of Education under the new Bill was chosen by the Legislature, which had previously and for many years chosen the State Superintendent of Public Instruction. By the terms of the Act, however, it was provided that after an initial term of six years the Commissioner of Education should be chosen by the Board of Regents. Enemies of the unification measure loudly predicted that the policies contained in the Act were at bottom political, and that at the end of six years the Legislature would take back to itself the power to elect the Commissioner of Education, and would see to it that it was made a purely political position.

The results of the unification measure have far more than justified the most confident hopes of its friends, as they have in every respect falsified the dire predictions of its enemies. Andrew S. Draper was elected the first Commissioner of Education. He has just now been reelected by the Regents in accordance with the undisturbed terms of the Unification Act and amid the applause of all parties and of people in every section of the state. During his six years of administration, he has assimilated and united two previously antagonistic educational organizations. He has lifted the powerful educational machinery of the state absolutely out of the domain of party politics. He has planned the monumental State Education Building, and brought it well on the way to completion, a building which will be a palace in itself and which will formally illustrate the faith of the people of the State of New

York in education. He has brought about cooperation between institutions of different types and classes, and he has stimulated and quickened them all into new activity and endeavor. Commissioner Draper has had thru all this period the loyal and unremitting support of his immediate colleagues, of whom one in particular ought to be named, because of the particularly influential relation in which he stands to much that has been done. This one is Augustus S. Downing, First Assistant Commissioner of Education.

To Commissioner Draper and to those who have worked so heartily with him; to the Board of Regents who have borne their part with good judgment and broad vision; to successive legislatures which have supported the Department of Education generously and well; and to the people of the State of New York who are the moving cause, as their welfare is the final end, of all that has been accomplished, we offer most hearty congratulations.

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In addition to Columbia College and Barnard College, as recorded in the EDUCATIONAL REVIEW for March, Yale, Chicago, Pennsylvania, Bowdoin, Missouri, Wesleyan, Michigan, and Mt. Holyoke have adopted the new college entrance requirements in Latin. It is reported that here and there a few ancient monuments are resisting favorable action by their several faculties, but the outcome seems sure. The College Entrance Examination Board will set papers in accordance with the new definition in 1911, and hopes soon thereafter to discontinue entirely the papers formed on the old basis.

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Amherst, Princeton, and Yale have recently been added to the membership of the College Entrance Examination Board.

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We regret to learn from the *Report of the United States Commissioner of Education for 1909* (p. 862) that in 1909 three institutions conferred the degree of Ph.D. as an honorary designation, contrary to the best academic practise. The three institutions were Taylor University, Indiana; Kansas State Agricultural College, and Ashland University,

Ohio. It is a matter of some interest that no one of the three conferred any degree of Ph.D. in that year on examination.

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The arrangements for the Boston meeting of the National Education Association are well under way. There will be a great patriotic celebration in the Harvard Stadium on the afternoon of Monday, July 4, when the principal address will be delivered by the President of the United States. The members of the Association recall with grateful appreciation the visits of President Harrison at Saratoga in 1892 and of President Roosevelt at Asbury Park in 1905. President Taft will receive a cordial and hearty welcome.

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A new and encouraging evidence of original work in educational theory and practise is furnished by the pamphlet entitled *Applied problems in algebra and geometry,* which is the work of a committee acting under the authority of the Mathematics Section of the Central Association of Science and Mathematics Teachers. The problems are practical, well ordered, and highly interesting. Principals and teachers can procure copies of this little pamphlet for merely a nominal sum from Miss Sykes of the Bowen High School, Chicago.

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Thousands of teachers thruout the country will learn with deep regret of the death of Alice W. Cooley at her home in Grand Forks, N. D., on March 25. Mrs. Cooley was one of the best known women in educational work in the country. She was for a number of years the supervisor of primary work in the Minneapolis schools, and later was assistant professor of education in the University of North Dakota. Her services as a speaker, writer, and teacher were always in demand within a wide field. She was an active member of the National Education Association and frequently appeared upon its program.

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An unfortunate error in printing substituted the year 1905 for 1895 and the year 1907 for 1897 in Professor Sadler's article on Dr. Harris at p. 192 in the March issue of the EDUCATIONAL REVIEW.

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